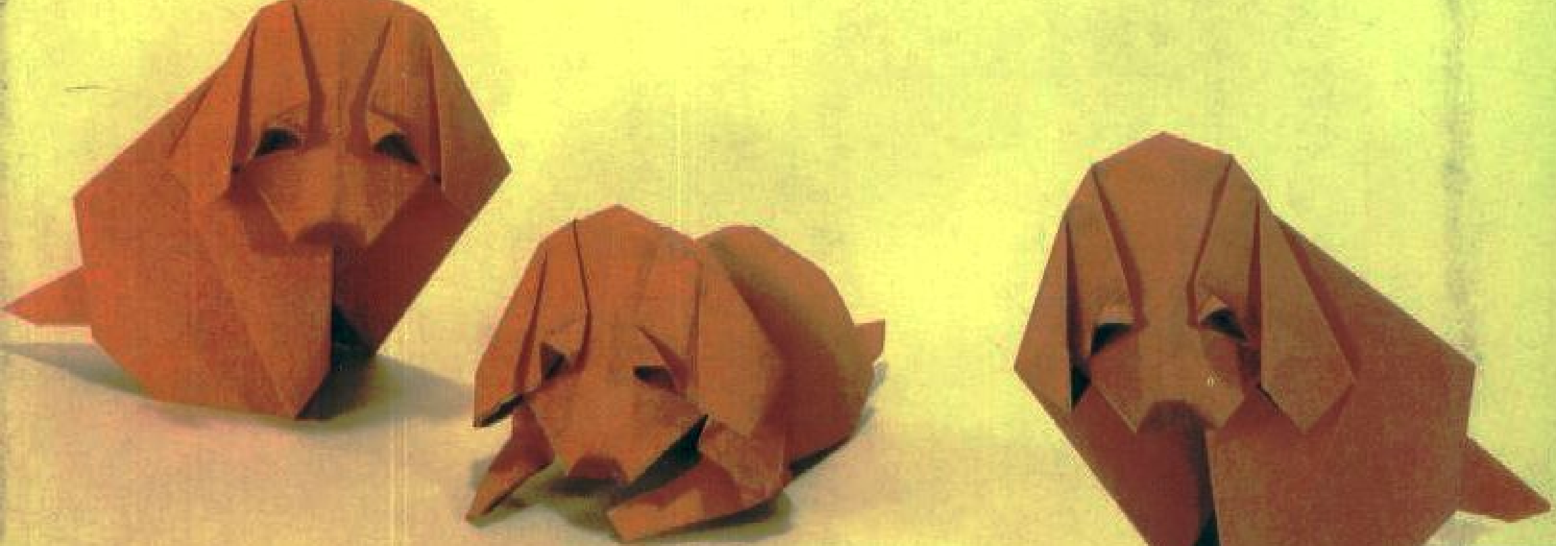
Origami Museum I
ANIMALS

by Akira Yoshizawa



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Translated by Hiroko Ichiyama and Mary Kiyono

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PREFACE

It gives me the utmost joy to create figures which are not only beautiful but are heart-warming and endear themselves to people. Every diagram introduced in this book was born out of my longing for many years to do this.

Creative Origami with free expression, which I admire most, begins by working with limitless lines and results in the production of the most beautiful figures which perfectly match the given theme. These folding lines must follow the laws of nature. The theme of this book is animals; therefore it is necessary for everyone of us to get acquainted with animals and observe them carefully in order to bring liveliness to the folded objects.

Here, I have tried to fold paper more freely and creatively combining planes and folding lines most effectively. In this way, each person can produce something unique out of plain paper and one's own creativity becomes tangible and alive.

In Japan, origami of the past was a repetitious copying, simply folding the same subjects exactly as others did. In such a way, there was no creativity in the works.

In 1955, there was exhibit of my works in Europe presented by Dr.Gershon Legman. Through the exhibition my works were introduced to many nations of the world as a completely new art of paper work. Since then, more and more people have become interested in and understand origami.

I believe that origami carries the message of peace to everyone in the world in the coming 21st century. I sincerely hope that origami can bring each one of you joy, at the same time can reach every corner of the world.

Akira Yoshizawa
President of
International Origami Society

September 1986

"ENDLESS JOY AND WONDER"

It is a source of great delight to know that in recent years the art of origami has spread throughout America, Europe and many other countries of the world.

It is more than fifty years since I first became enchanted with origami. I then saw, through Mr. Yoshizawa's books, that unbelievably beautiful, life-like objects could be created from a combination of folding lines and planes on a simple piece of paper. At the same time, it filled me with a sense of endless joy and wonder. Since that beginning, I came to know Mr.Yoshizawa through years of correspondence and finally, in 1959, I was able to meet him in person.

Mr.Yoshizawa, the gifted master of origami, who excels others by far, has created artistic, ingenious, heart-warming creatures and figures in abundance. I am so happy that there is now a book in English so that you will be able to not only discover the great joy of origami but will receive an insight into the natural scientific and philosophical knowledge which underlies all his work.

It is the desire of Master Yoshizawa that origami enthusiasts will share his hope that this creative art will be correctly introduced to others.

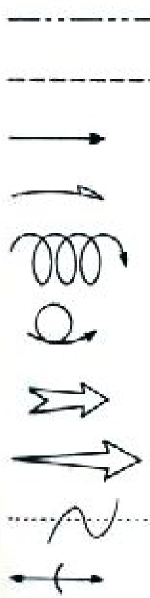
I myself continue to value creative origami, to spread the knowledge of it because I am convinced that it is meant to enrich everyone, everywhere.

Lillian Oppenheimer
Founder and Director
The Origami Center of America

October 1986

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SYMBOLS OF FOLDING



Mountain fold

Valley fold

Fold toward right side

Fold toward wrong side

Rolled fold

Turn over

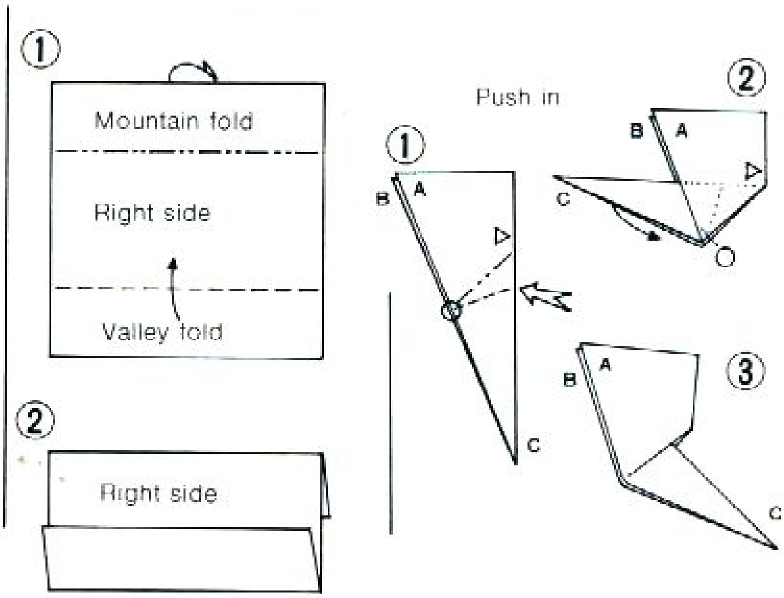
Pull out or push in

The diagram magnified

Curve softly

Indicates the direction of the fiber in the paper

Center line



NOTE: • The symbols only shown on the exterior surfaces.

• If the instructions are the same for several forms, the repetitious parts are deleted.

• When diagrams are sufficient, instructions are omitted.

• We used symbols ABC plus ○ □ △ and others when necessary to mark the corners and surfaces.

• In the small areas of the diagrams, the folding lines are extended. If you match your paper to the corners it will make it easier for to fold a figure.

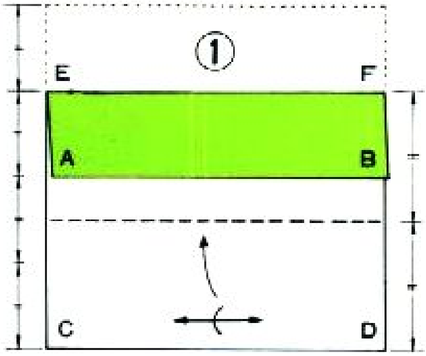
BUTTERFLY



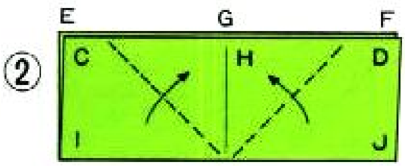
With a sheet of paper and a bit of free time, you can enjoy creating endless beauty and joy. Paper for origami can be found in abundance all around us in innumerable textures and types. In Creative Origami the paper is not cut or pasted but is simply folded and the lines and refraction express the beauty of nature, delight or sorrow. Just as there is an endless variety of paper, so are there any number of themes you can choose from. However, unless you first become familiar with the basic folds, you cannot fold freely ; only then will you gradually be able to step further into the world of creative art.

After the long cold winter, spring has come. Flowers bloom in the fields and butterflies flit among them enjoying their sweet scent. What a pleasure it would be if you could write a poem or fold a piece of paper to express the joy of spring.

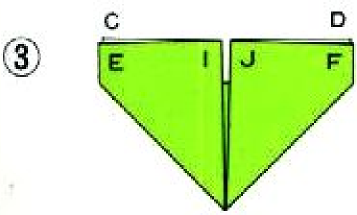
Select your paper so that the color and texture will match the fragility of butterflies. Stick folded butterflies on the wall or make a mobile with them.



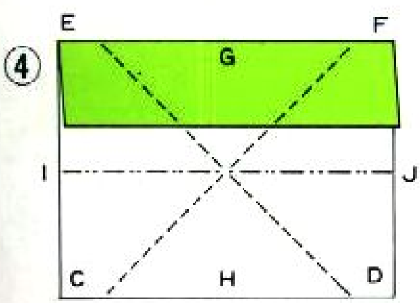
1 Use a square sheet of paper. Fold at the point of ¼ of the sheet. Then fold it in half. (You can use a rectangular sheet with a 3 : 4 ratio.)

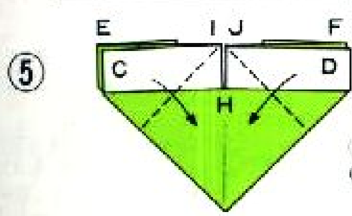


2 Fold I & J upward as arrows indicate.

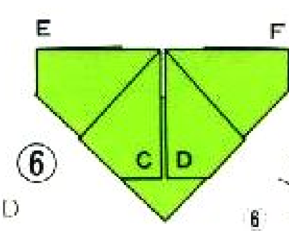


3 Open as in diagram 4. Mark the mountain and valley folds, refold as in diagram 5.

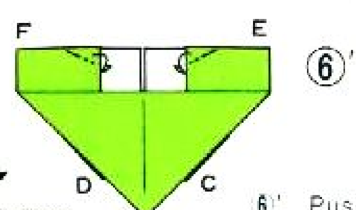




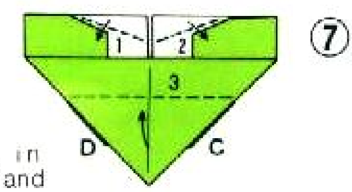
5 Fold C & D downward.



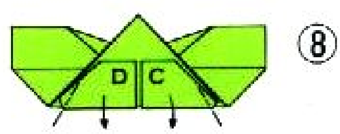
6 Turn over.



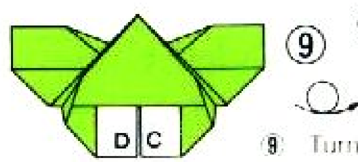
6′ Push the corners in.



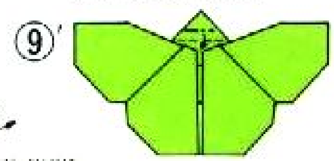
7 Fold in order of 1, 2 and 3.



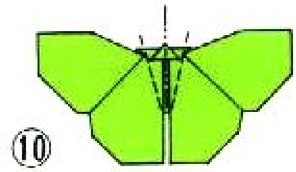
8 Push down C & D.



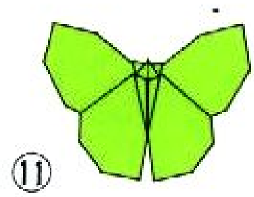
9 Turn over.



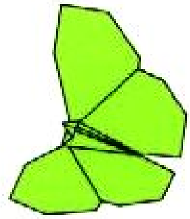
9′ Make a pleat and hook it on the body.

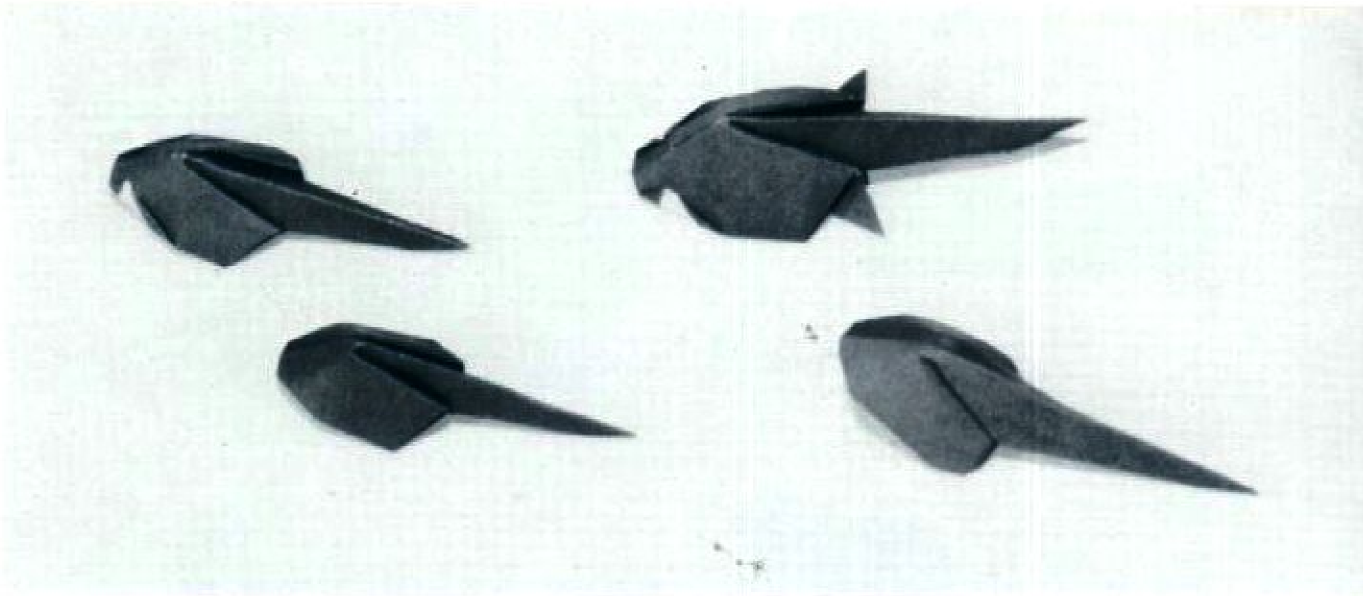


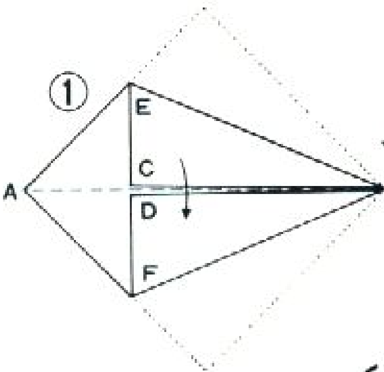
10 Adjust the head and body by folding on the mountain and valley folds.



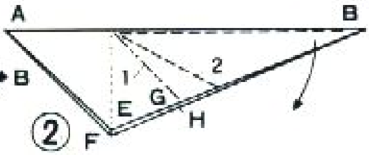
Finish



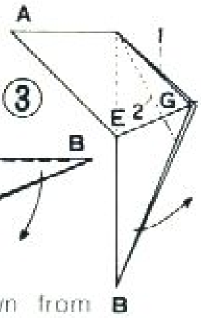




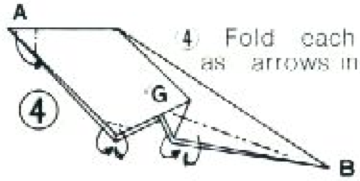
① Fold a square piece of paper as in ①, then fold inward in direction of arrow.



② Bring B down from the mountain line 1 between G & H.

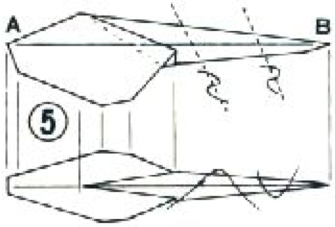


③ Pull B out of the inside of dotted line 2 making it look as in ④.



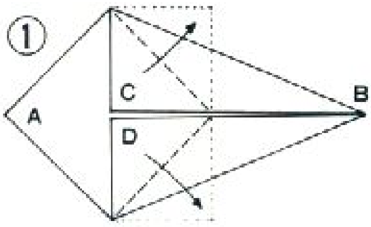
④ Fold each part as arrows indicate

〔A〕 Finish

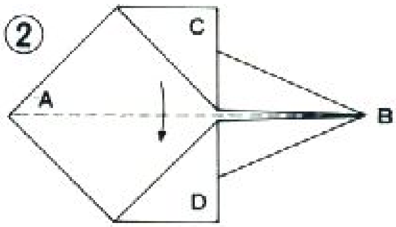


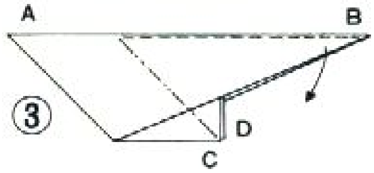
⑤ Curve B gently and spread out the body section only.





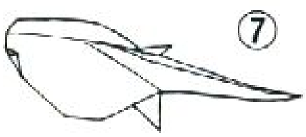
① Fold a square piece of paper as in ①, then fold C & D in direction of arrows.

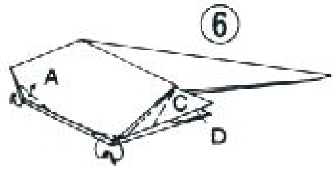




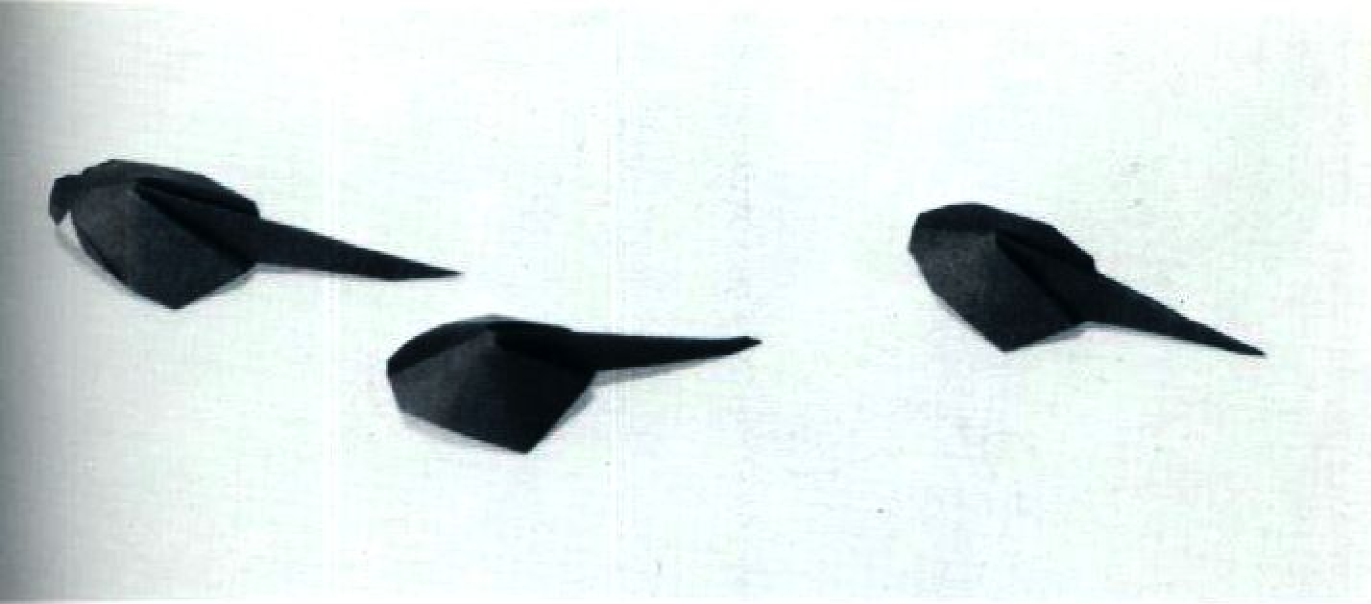
③ Fold B in between C & D.

〔B〕 Finish

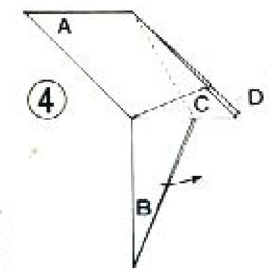




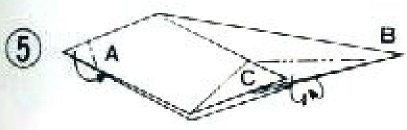
⑥ Make eyes by folding small corners of A. Fold C and D inward on the mountain line and bring them out at the valley line to make the feet.



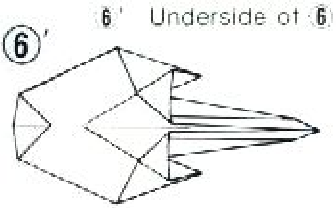
④ Turn B inside dotted line.



⑤ Fold in corner of A, then fold part of B from mountain line in shape of ⑥'.



⑥' Underside of ⑥

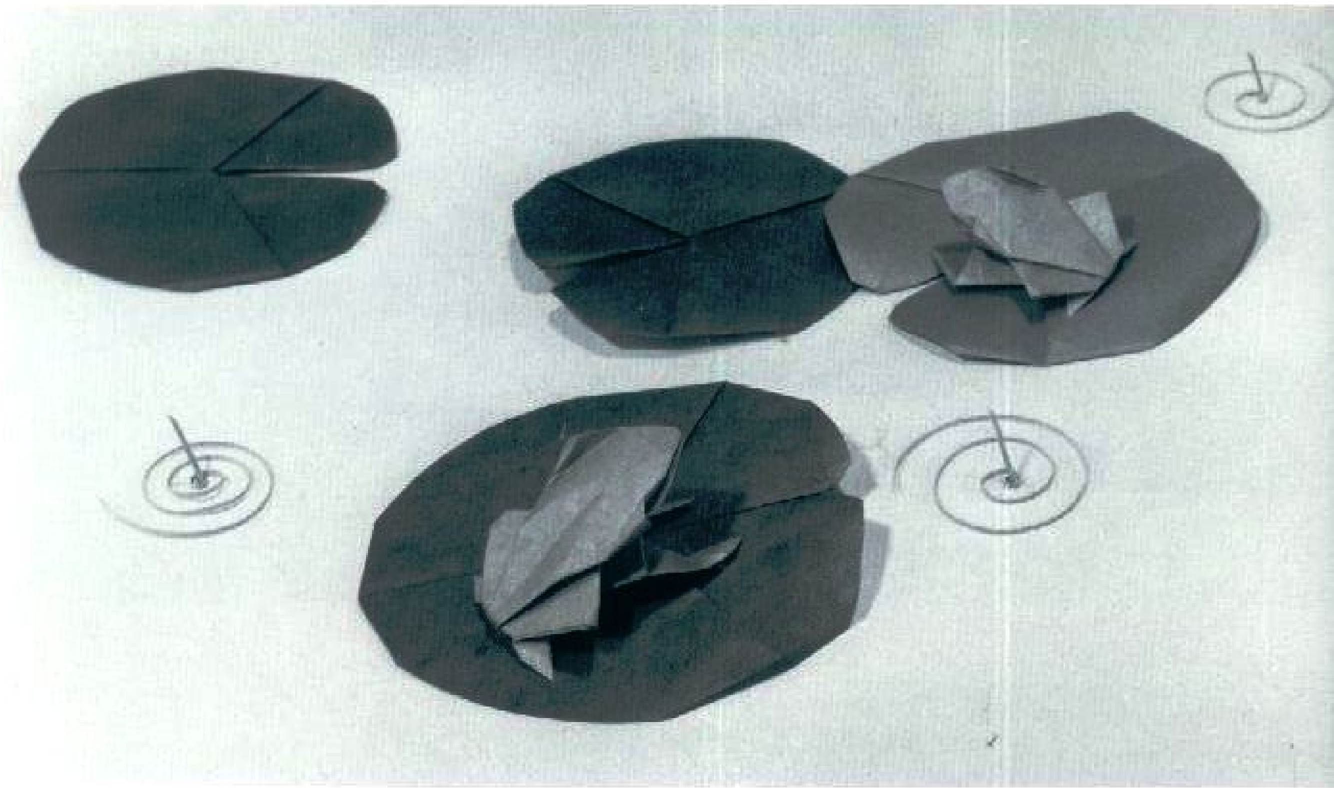


TADPOLE

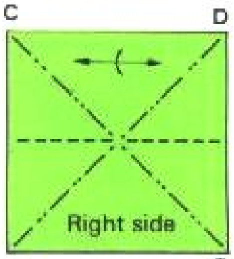
I grew up in the country and I often used to walk barefooted on the paths between the rice fields. Many times, I found tadpoles swimming in the streams or in the irrigation water. A small tadpole looking like a black ink spot with a tiny tail soon grows to the size of a lima bean. Then, rear legs sprout near the tail and forelegs later appear. Finally, there is a baby frog, a perfect miniature of its parent, hopping around all over the place.

When a baby frog hears footsteps, it quickly jumps into the stream and hides itself, leaving behind only the sound of a faint 'splash'. If I was quick enough, I could catch a tiny frog in my hand. When I slowly opened my fingers, I would find it looking up at me in surprise. Yes, I remember my childhood days very well.

Here then is a tadpole. After you learn how to make it, why don't you make many more? You can use small sheets of gray paper and arrange them as if they are swimming in a pond.



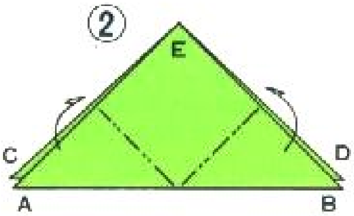
METHOD I



①

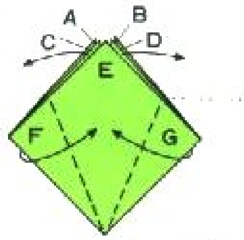
① Mark both mountain and valley lines and fold accordingly.

②



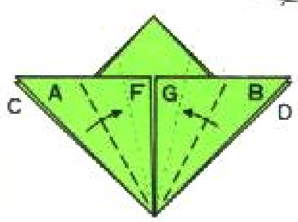
② Fold AC and BD back as arrows indicate.

③



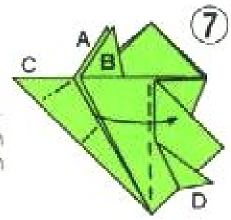
③ Fold F & G inward. Pull AC and BD out toward the dotted lines.

④



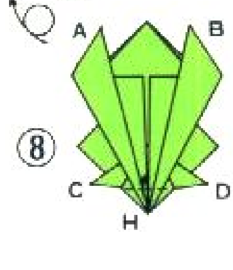
④ Fold A & B.

⑦



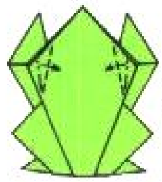
⑦ Turn A & B in direction of arrow. Fold C the same as D and make the figure shown in ⑧.

⑧



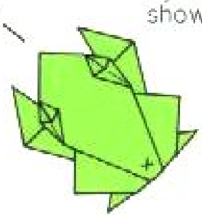
⑧ Fold H upward and then turn over as in ⑨.

⑨



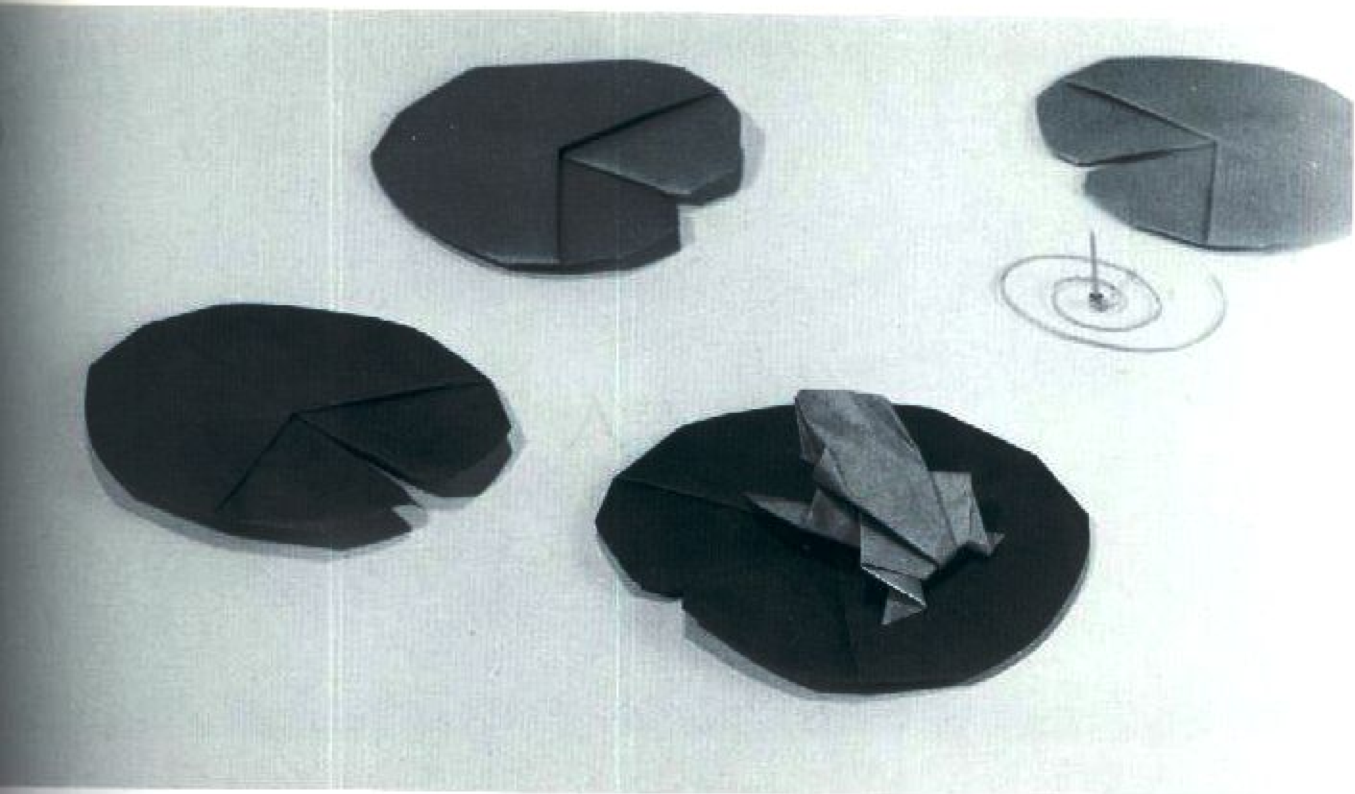
⑨ Make eyes by folding as shown.

⑩

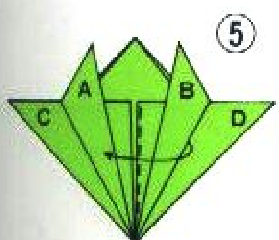


Press point X and slide your finger, then frog will jump forward.

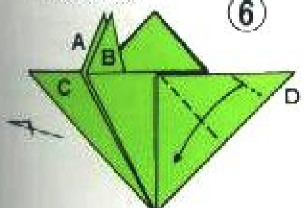
Finish



JUMPING FROG

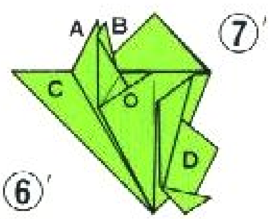


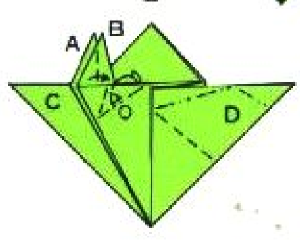
⑤ Bring B to left as the arrow indicates.

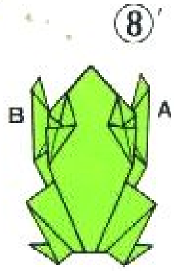


⑥ Fold D following the valley and mountain lines. Make rear legs.

METHOD II







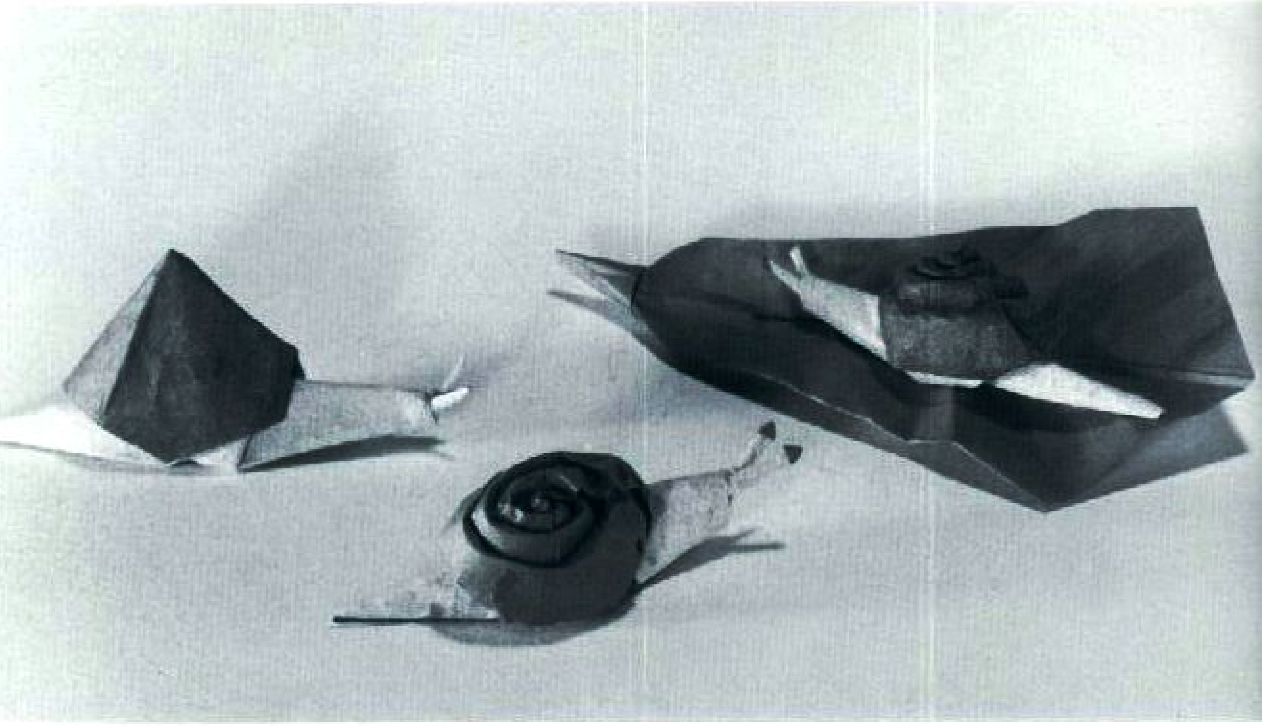
Finish

In Method II, you follow steps ① to ⑤ of Method I, then fold ⑥' and ⑦', making front legs thinner and rear ones longer.

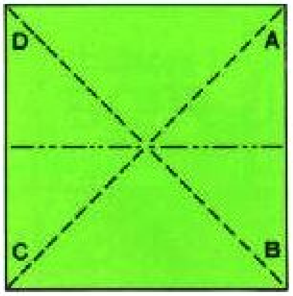
Let's make a mobile origami. The diagram for the frog is designed functionally so that it produces a movement just like a real frog. If you fold it well, it will jump four or five times the length of its body. You will have fun playing with the folded frog by having it jump towards a bullseye marked on drawing paper or onto your notebook. You can also fold many frogs and let them have a jumping competiton.

By varying the size of the body or curving the nose, you can also make different kinds of frogs such as the green frog or a bull frog.

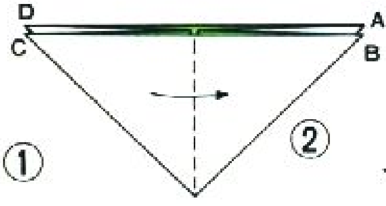
Be careful to note the ←‹— in diagram ① which denotes the direction of the fiber in the paper.



SNAIL

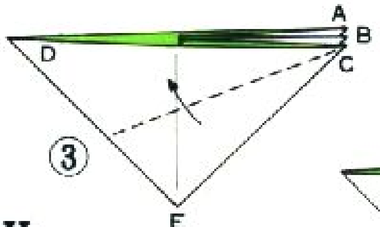


Use a square piece of paper with different colors on each side to differentiate the body from the shell.



① Mark the mountain and valley lines by folding. Make ②

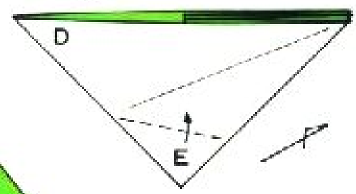
② Turn C to right.

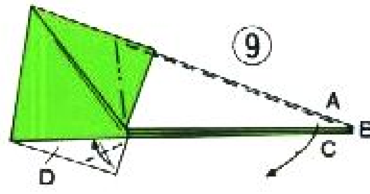


③ Fold ABC together to make ④.

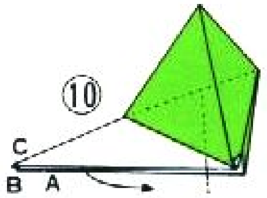


⑤ Bring E to the crease made in step ③.

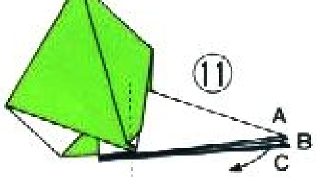




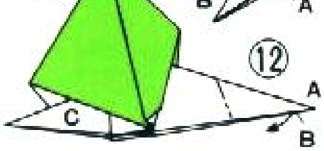
⑨ Fold ABC together down to the left on the mountain fold, as the arrow indicates.



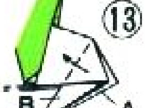
⑩ Fold ABC together as the arrow indicates inside of the dotted line.

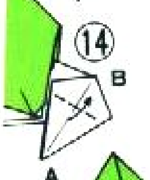


⑪ Make a leg out of C by refolding it from inside as the arrow indicates.

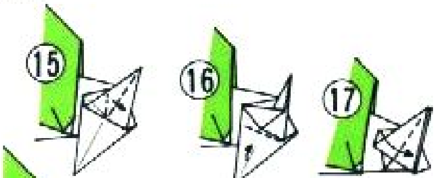


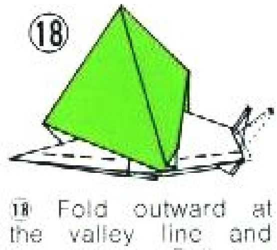
⑫ Fold AB inside to make ⑬



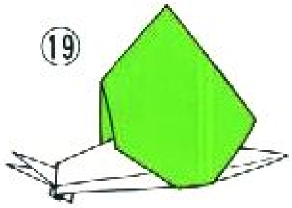


HORNS





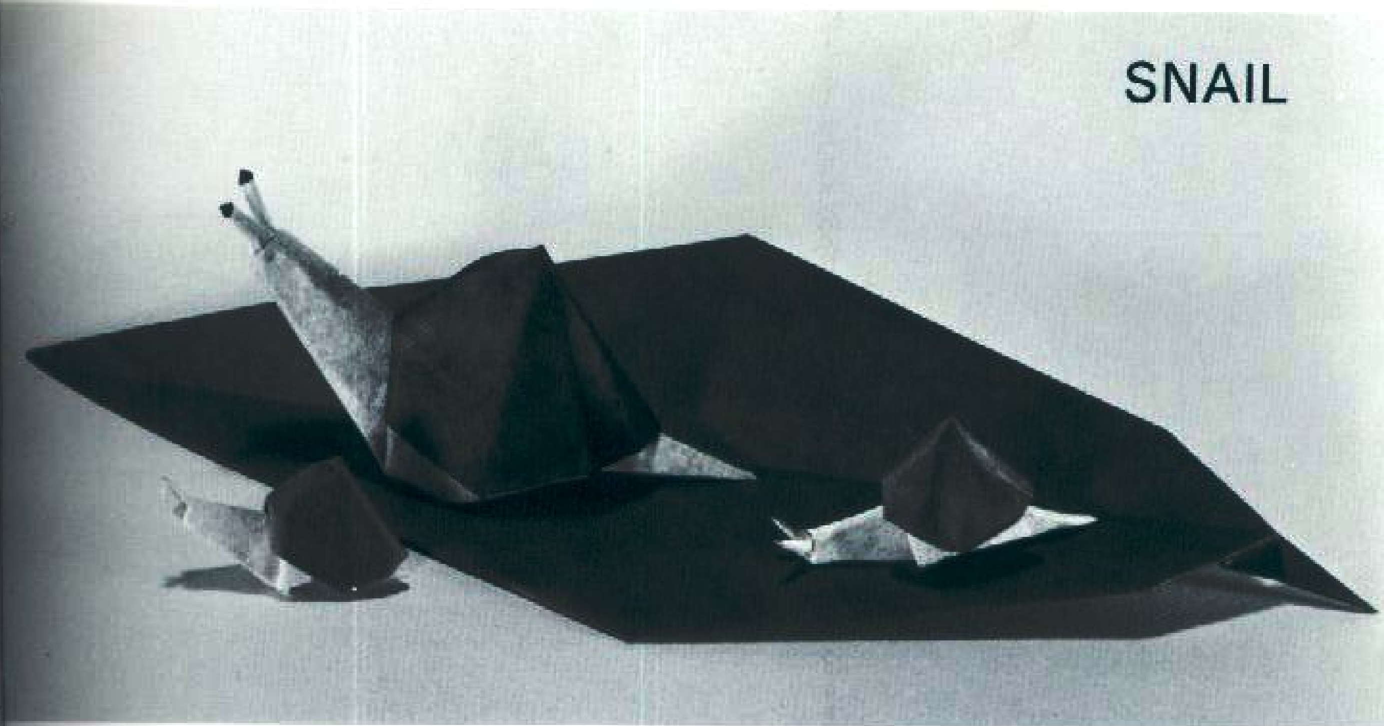
⑱ Fold outward at the valley line and make legs. Pull out horns.



Fold the corners of AB a bit in order to make eyes as shown in photograph.

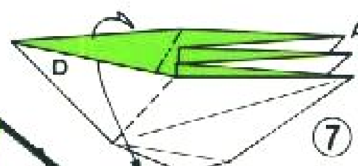
Finish

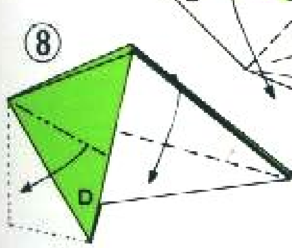
SNAIL



⑥ Open up as in ⑦. Fold D over on the valley line to make ⑧.







⑧ Fold in direction of arrows and bring D to the dotted line.

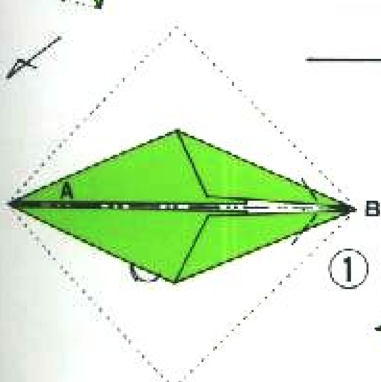
After a light afternoon shower, we often find snails sliding slowly down the trunk of a tree or coming out from under the fallen leaves. There are several shapes of snails shown in this picture.

If you fold E in diagram ③ inward instead of outward, the body section and the shell section will be reversed. This will determine whether the shell winds sinistrally or dextrally, in other words, counter-clockwise or clockwise.

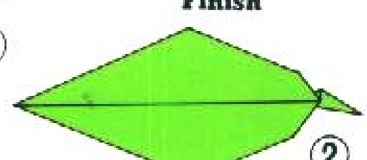
The spiral of the shell in the picture is folded from the outside. You can pinch the paper softly and fold the curving line. To make the shell larger, you can slightly shift the folding line.

Turn A of diagram ⑩ to the right to make the legs. B and C are for the little horns.

LEAF

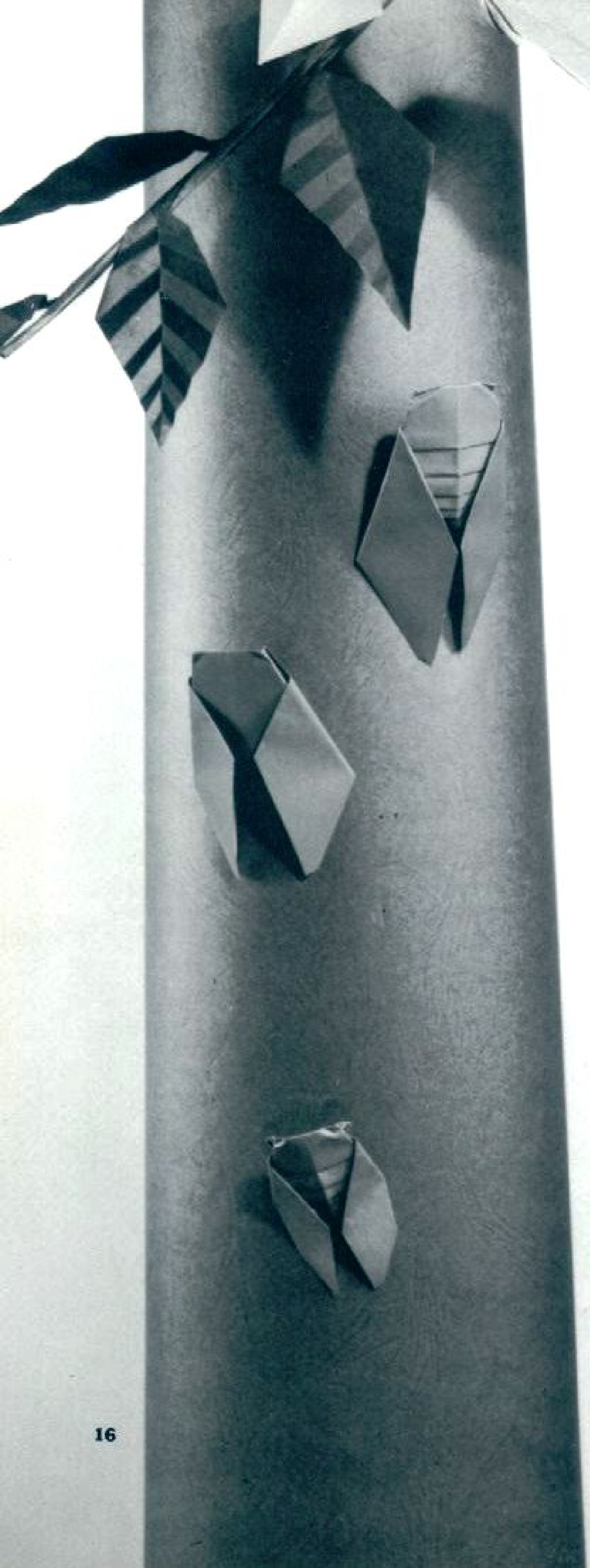


Finish



① Make diagonal lines on a square piece of paper. Fold them all together.

② Pinch B and make a stem. Open it up a little bit and shape like a leaf.



CICADA

When you wish to make origami of beautiful creatures or cute insects, it is best to watch and observe carefully how they act and live in their natural surroundings instead of depending upon illustrated books and photographs.

By closely watching a tiny insect that is doing its very best to survive, you cannot help but feel love for it. When you have this feeling of love, it will invariably show up in your work.

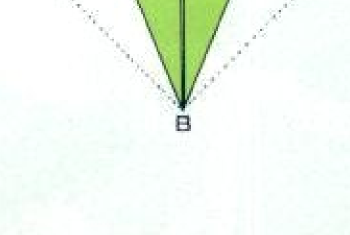
There are many kinds of cicadas. You can try to make different ones out of the same diagram shown here, such as the cicada that sings in the tree under the hot summer sun, the hauntingly clear-toned cicada that you can hear in the morning or evening mist and the small cicada that sings at the end of summer.

Make a tree trunk by rolling a heavy sheet of paper.

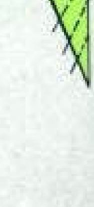
Make branches by rolling a long and narrow sheet of paper.

As for the leaves, you can fold paper as shown in the diagram. Push the leaf into the branch.

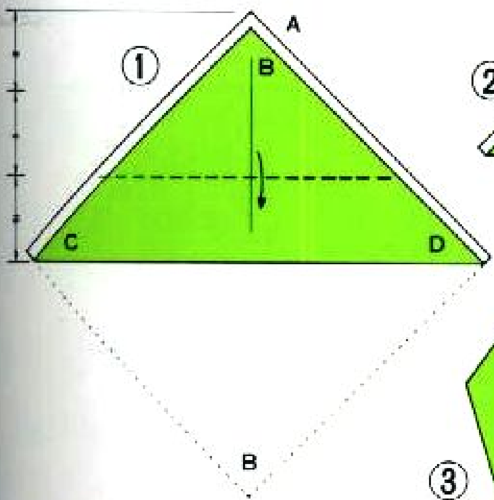
①



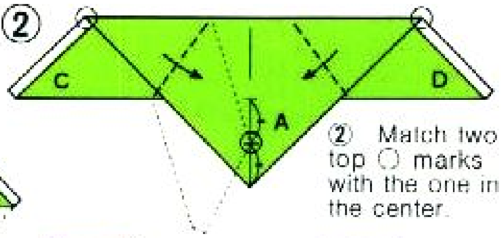
②



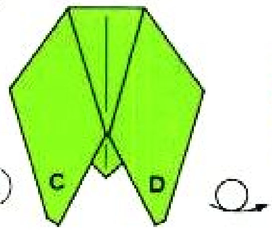
[I]

① 

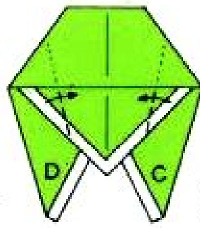
① Make a crease along diagonal line AB. Slide B down slightly as shown in the diagram. Fold AB together down on the valley fold.

② 

② Match two top ○ marks with the one in the center.

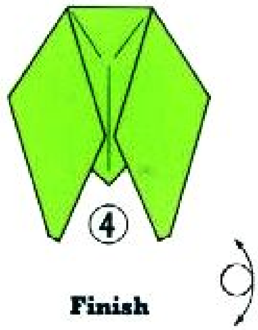
③ 

③ Turn over.

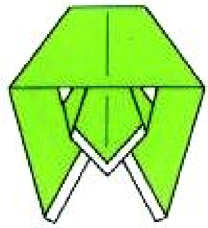


③'

The back side of ③. Fold inside along the dotted line.


④

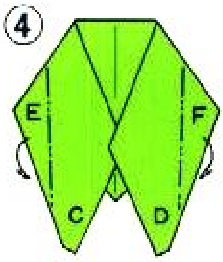
Finish



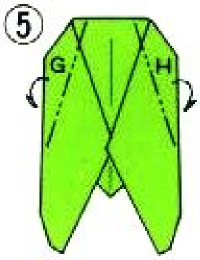
The back side of ④.

[II]

Continue from step ④ of [I]. Overlap C with D as shown.

④ 

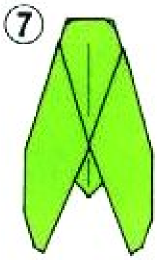
④ Fold E & F on the mountain folds.

⑤ 

⑤ Fold G & H inward.

⑥ 

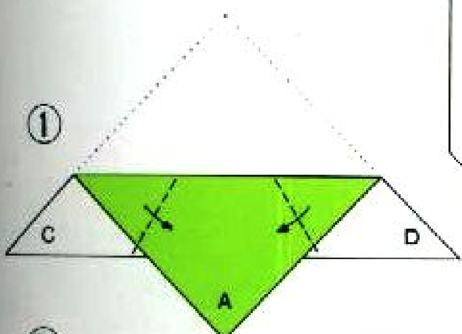
⑥ Make eyes by folding the corners.

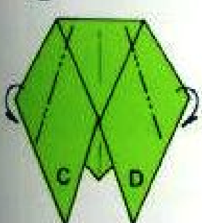
⑦ 

Finish

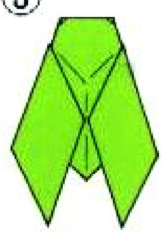
[III]

① Prepare an isosceles triangle out of a square sheet of paper. Fold A down at 1/3 of length.

① 

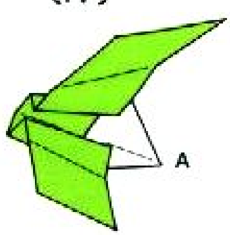
② 

② Fold as arrows indicate.

③ 

Finish

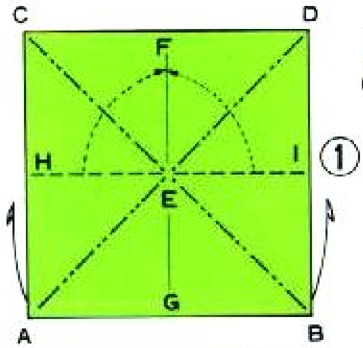
[IV]



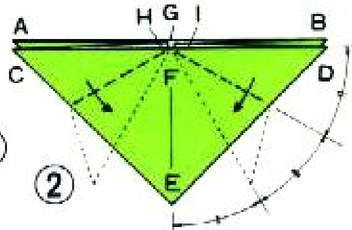
Spread wings of cicada seen from the back of ③. Hold A with fingers and throw it. It flies well.

[V]

For the cicada shown at the top of the picture, fold an isosceles triangle at 1/4 of the length. Make many pleats on A. Follow steps in [I] and [II].

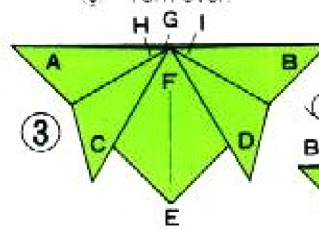


① Mark mountain and valley folds as shown. Fold as ②.

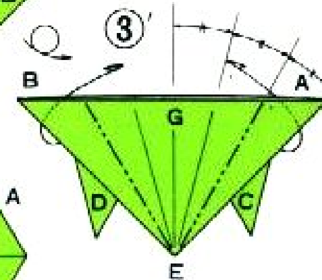


② Fold C & D on dotted lines marked.

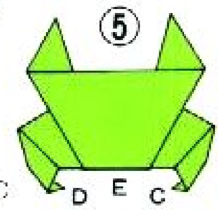
③ Turn over.

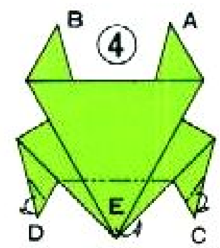


③' Fold A & B backward as arrows indicate.



Finish





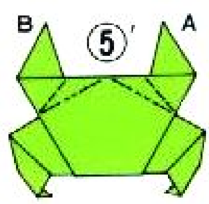
④ Fold D, E & C as arrows indicate.

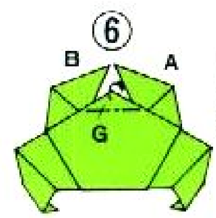
〔A〕

⑤ Let it stand on D, E and C.

In order to make 〔C〕, I folded CD forward, but crab 〔A〕 will stand better, if you fold CD on the mountain fold

Follow steps from ① to ⑤ of 〔A〕.
⑤' Fold A & B backward on mountain folds. Fold again on the valley folds.

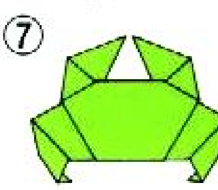


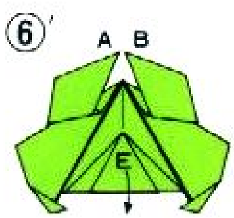


⑥ Fold G inside as the arrow indicates.

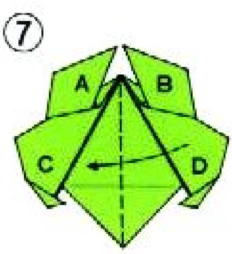
〔B〕

Finish

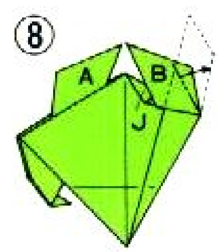




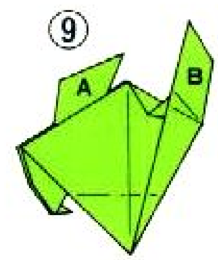
⑥' As shown in ①', make folding creases H & I. Open up again and fold following steps from ① to ⑥ in 〔A〕 and 〔B〕. Turn over as in ⑥'.



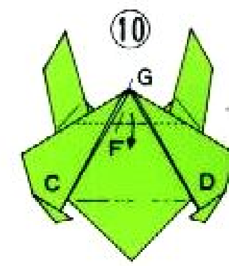
⑦ Bring D in direction of arrow.



⑧ Pull out the part of B that doubles over J. Make the mountain fold and pull again to the place shown by the dotted lines.

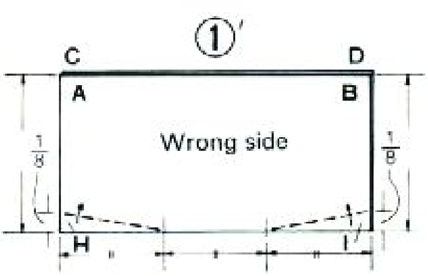


⑨ Fold A same as B. Spread C&D open.

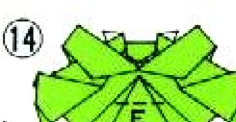


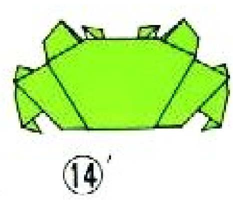
⑩ Fold F downward. Part of dotted lines both sides should be folded inside.

〔C〕



①' The easiest way to make eyes.





Finish



⑮ Let it stand on corners of L, C & D, and pull out A & B to form figure ⑮.

CRAB

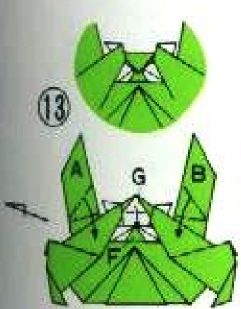




⑪ Pull G, that covers half of the back of HI apart, while holding HI.



⑫ Fold H & I following folding lines shown in ①'. Fold C, D, E & F as arrows indicate.



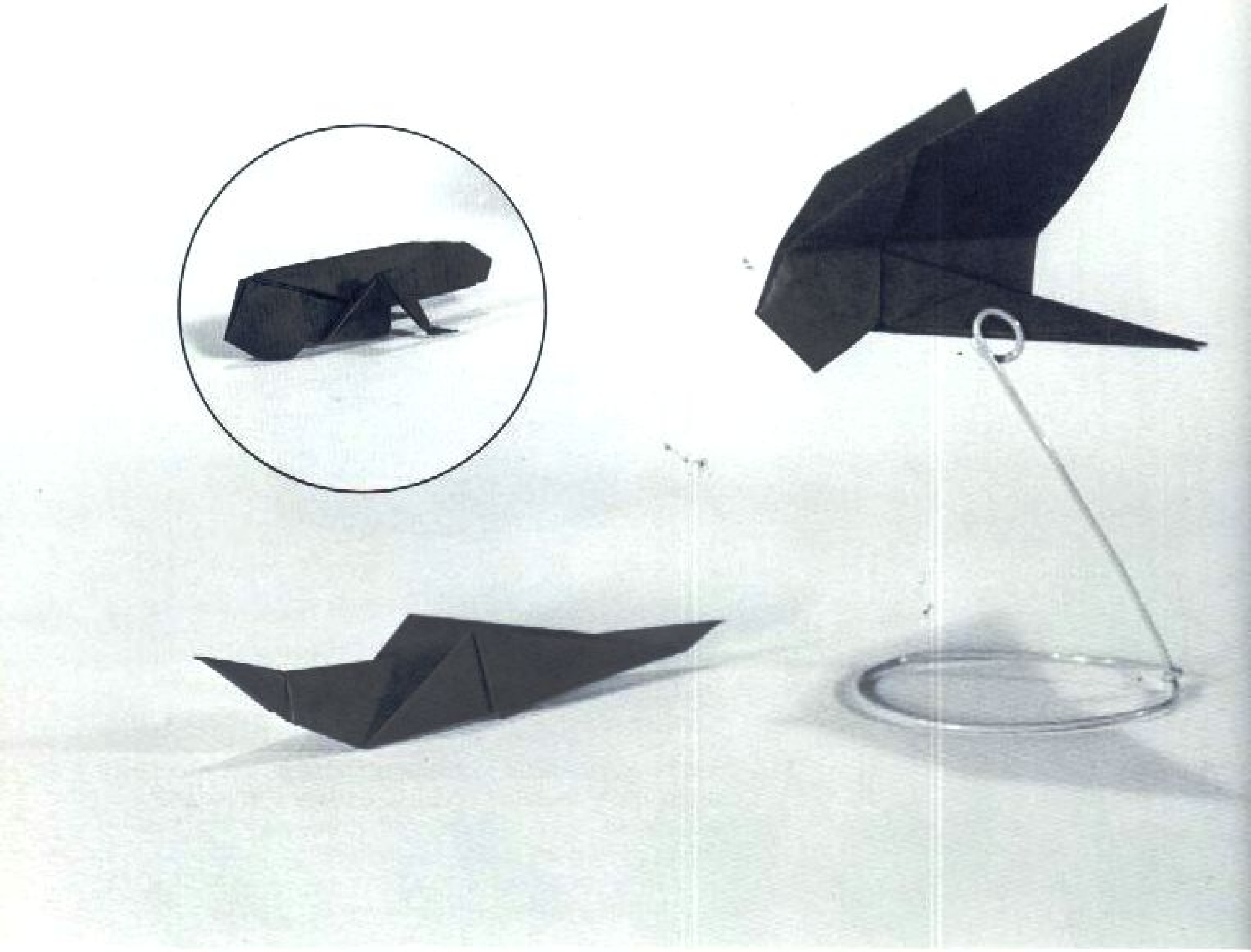
⑬ Fold the corner of G and bring it down to the corner of F. Fold A & B on mountain and valley folds.

It is very difficult to make a figure of any creature that has many legs but I have succeeded in folding a realistic crab using complicated yet basic folds. The purpose of origami is not necessarily to reproduce a replica of a living creature but to capture its characteristics, employing the simplest method possible.

With a square piece of paper, I made each part of the body by simply folding the corners. I was able to indicate the eyes and the foaming mouth by utilizing the different colors of the right and wrong sides of the paper. I believe that it succeeds in expressing the characteristics of a crab.

In folding animals, I usually make the figure on the basis of the bone structure. In the case of a crab, its shell represents its bone structure. You will be able to make different kinds of crabs by varying the angle of the shell, the size of the legs and the shape of the claws.

In order to show that there are four legs on each side, the feet should be folded larger to give them volume.



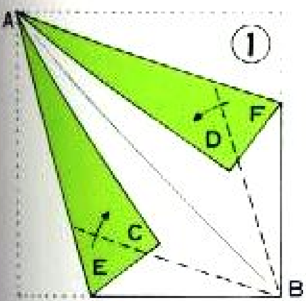
GRASSHOPPER

There are no boundaries in copying animals and insects realistically so in this case, I have dared to focus upon the creature in a more abstract way. Watching grasshoppers in the field makes me eager to express their movement in origami.

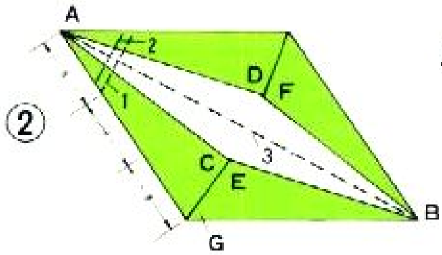
Grasshopper 〔A〕: When you fold GH of diagram ③ back and gently push the top down to the dotted line, you will suddenly have a lifelike figure instead of a mere diagramatic pattern.

Grasshopper 〔B〕: This grasshopper has its rear legs extended and is flying through the air. A grasshopper, unlike a bird or a butterfly which fly by using their wings, springs up on its rear legs and glides through the air. The grasshopper in diagram ⑨ can fly as it is but it will go farther if you push down EF of ⑧, which makes a little more space under the wings and this creates a special air stream.

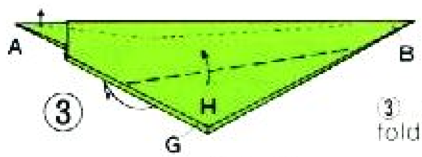
Grasshopper 〔C〕: This is grasshopper 〔B〕 at rest, with its wings folded.



① Use 8 centimeter square paper.
Fold as in ①. Fold F & F inward.



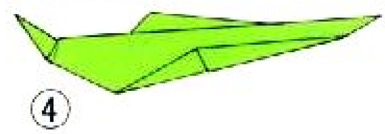
② Fold A down on the valley fold 1, and fold up on mountain fold 2. Fold into half on the valley fold 3.

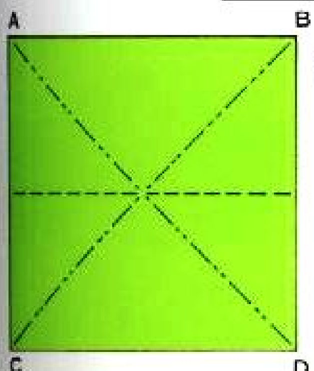


③ Pull out A and fold G & H upward.

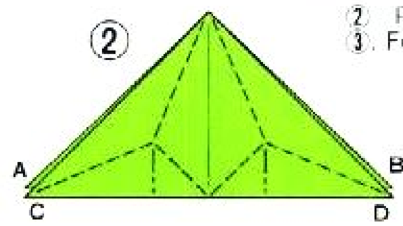
(A)

Finish

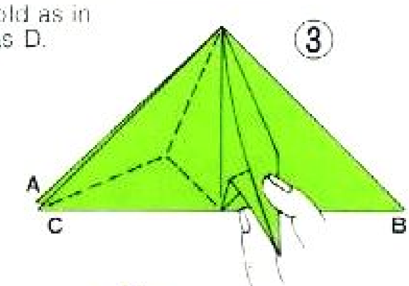


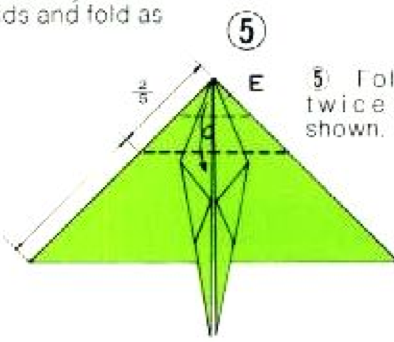


① Mark valley and mountain folds and fold as in ②.

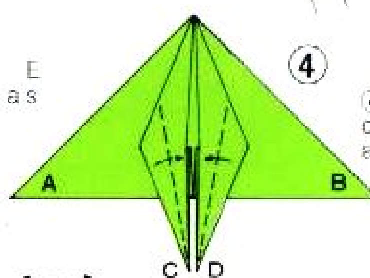


② Pinch D and fold as in ③. Fold C same as D.

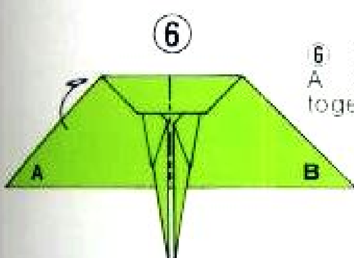




⑤ Fold E twice as shown.



④ Fold in direction of arrows.



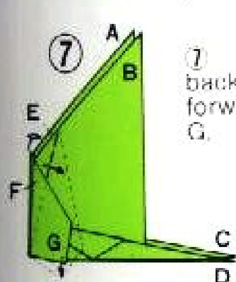
⑥ Bring A & B together.

(B)

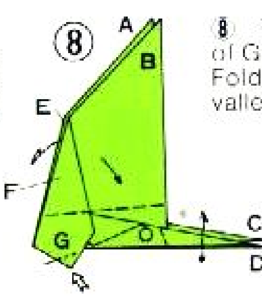
Finish



⑨ Hold at point ○ of ⑧. Balance the two wings. Throw into the air.



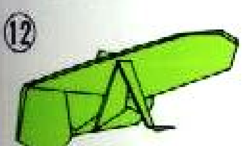
⑦ Fold F backward and F forward. Pull out G.



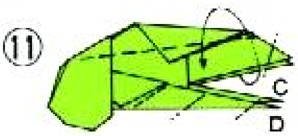
⑧ Fold the corner of G. Spread C & D. Fold wings on the valley line.

(C)

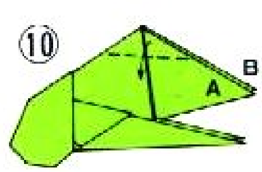
Finish

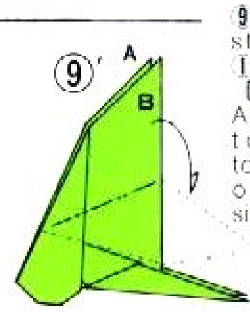


⑪ Fold the valley fold and bring over one of the wings. Fold the bottom of the stomach and the wing tips inward. Fold C & D to make legs.



⑩ Fold down as shown.

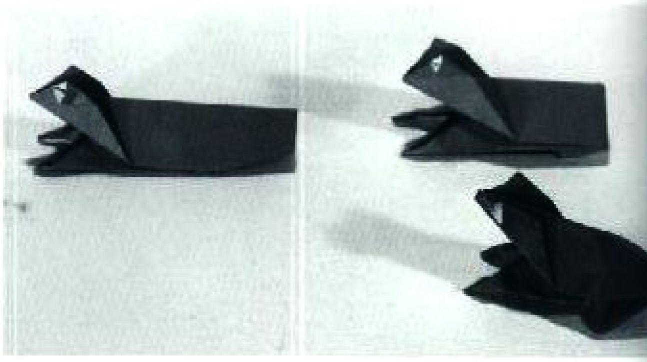




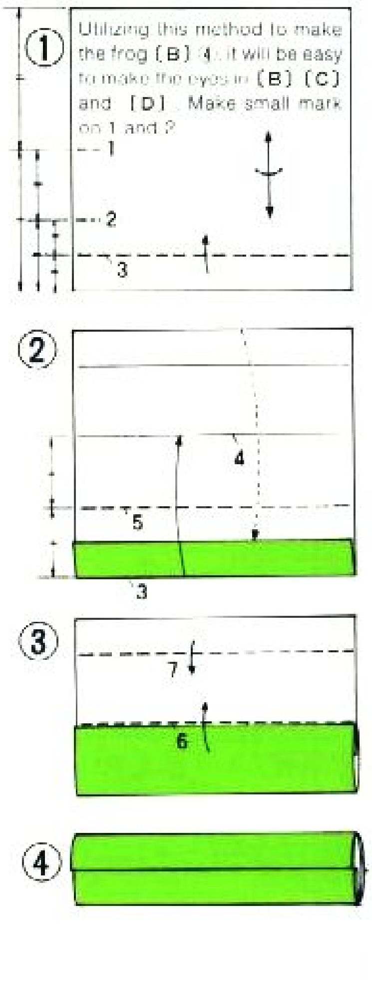
⑨' Follow steps from ① to ⑨ of (B). Fold A & B together toward the opposite side.







(Note)



JUMPING ORIGAMI

Children are very interested in moving objects. The ones shown here, unlike those which must be made by an adult, can be made and enjoyed together with the parents.

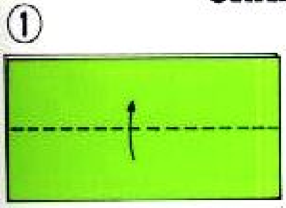
Folding paper in layers makes it more tractable ; then a light tap on the area indicated by the arrow or a slight push will make it bounce forward.

There are vertical and horizontal fibers running through origami paper. It is easier to fold the paper along horizontal fibers. However, in making jumping figures as in ① of grasshopper (A), it is wise to fold the paper against the vertical fibers.

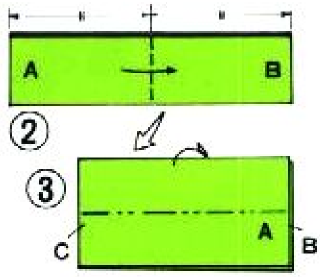
Here I have shown several simple folds. The common factor among them is that from these forms you will be able to progress to individualistic variations.

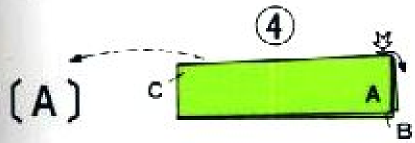
When teaching children though, I would advise you to teach one pattern until they have thoroughly learned it and after an interval, go on to a different pattern.

GRASSHOPPER

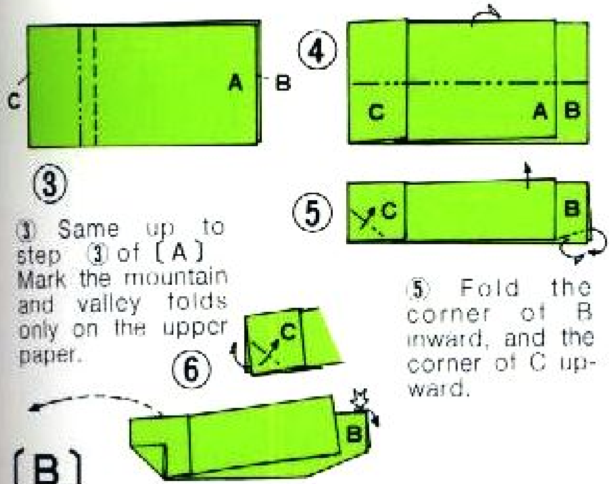


① Fold the square paper twice.



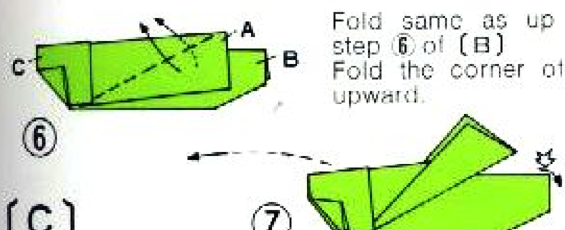


④ When you press the point shown by the arrow, it should jump and move forward.



③ Same up to step ③ of 〔A〕 Mark the mountain and valley folds only on the upper paper.

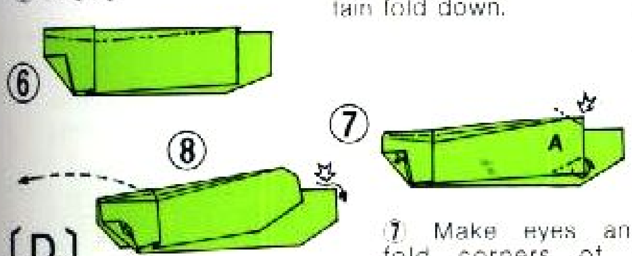
⑤ Fold the corner of B inward, and the corner of C upward.



Fold same as up to step ⑥ of 〔B〕
Fold the corner of A upward.

Fold same up to step ⑥ of 〔B〕.

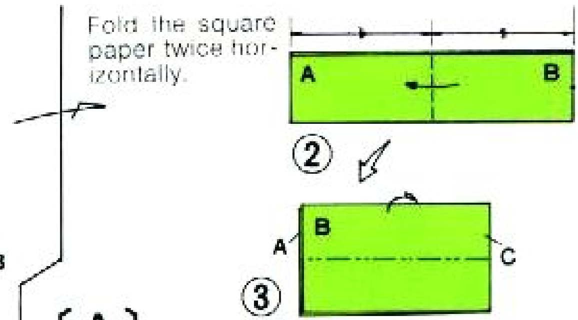
⑥ Press the mountain fold down.

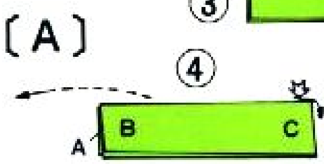


⑦ Make eyes and fold corners of A inward.

FROG

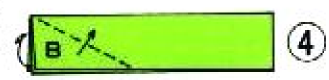
Fold the square paper twice horizontally.

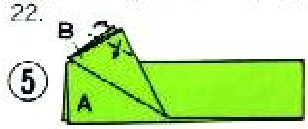




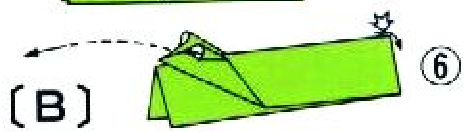
④ If you press the point shown by the arrow, it will jump and move forward.

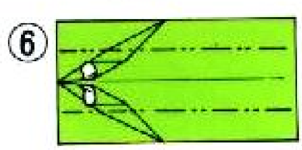
You can follow the same steps from ① to ④ of〔A〕. To make eyes 〔B〕〔C〕 and 〔D〕 more natural, follow diagrams on page 22.



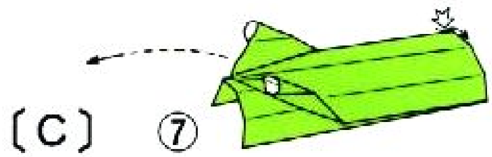


⑤ Fold corners upward. Make eyes using small triangles.

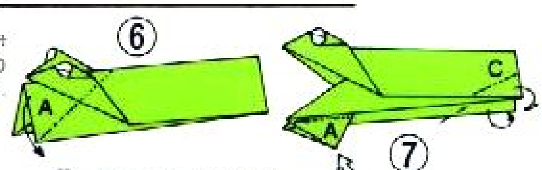




Fold steps ①—⑥ of 〔B〕 and open up. Mark mountain folds as shown.



Fold same up to step ⑥ of 〔B〕.

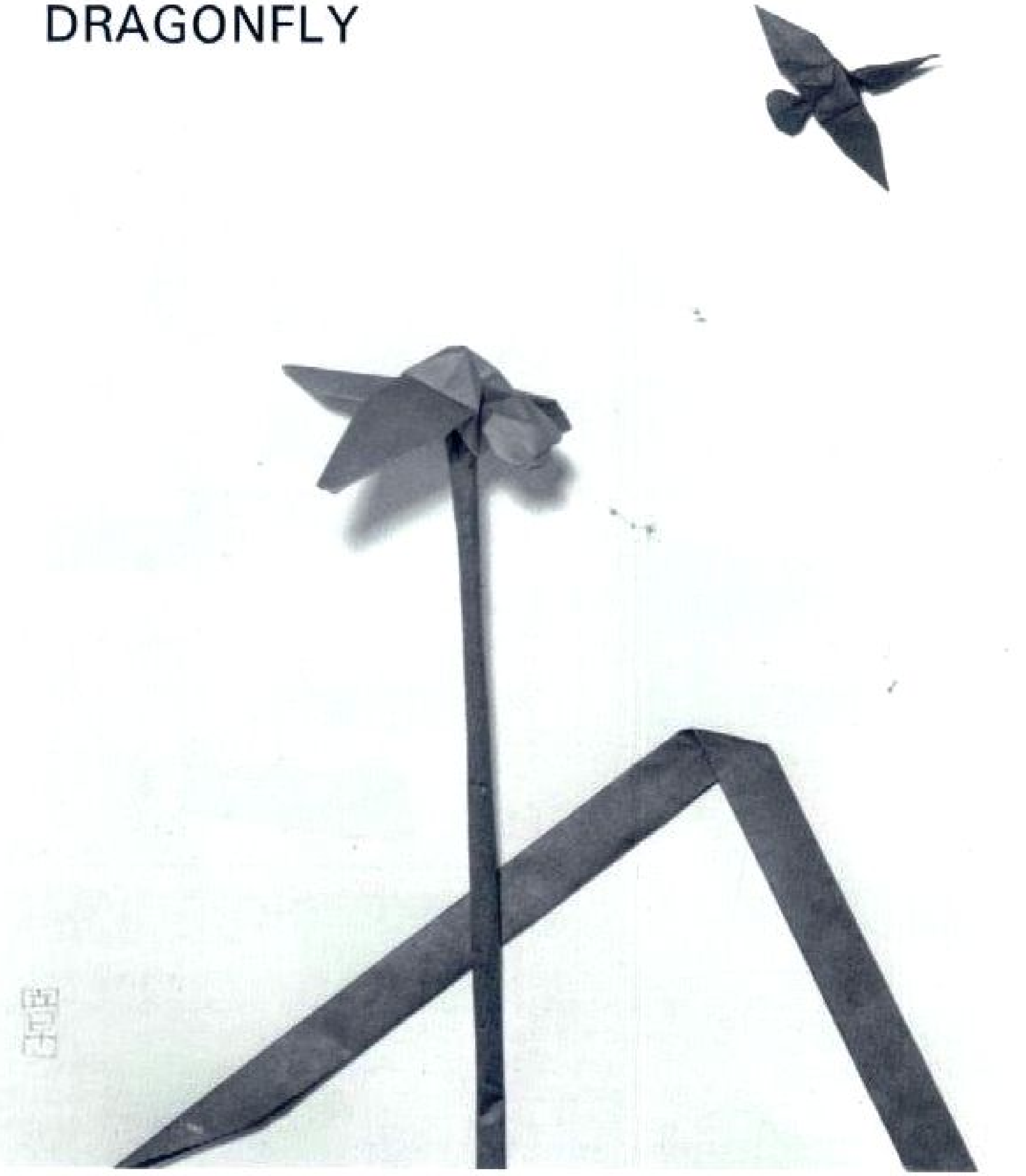


⑥ Fold A down at the point of the mountain fold.

⑦ Fold A in between the paper and fold corners of C inward.



DRAGONFLY

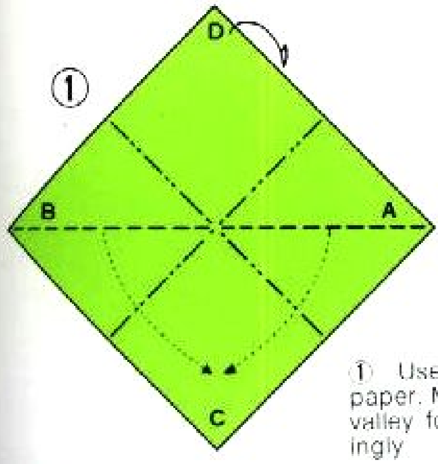


Let's fold a red dragonfly flitting in the bright autumn air.

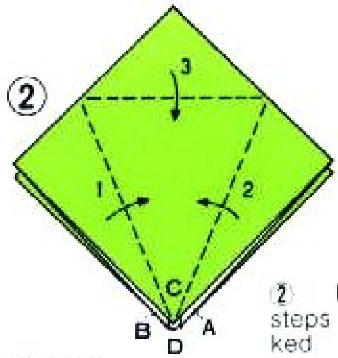
As shown in the photograph, you can make a nice display of a dragonfly resting on a leaf stem which is made from a sheet of long paper.

If you find it difficult to make the head, you may simply roll the paper and push it in from both sides. You can make many dragonflies with your children and let them perch on the top of a pole or make a mobile of them.

You will get a great deal more enjoyment if you go outside and observe dragonflies in motion instead of just folding one by following a diagram.

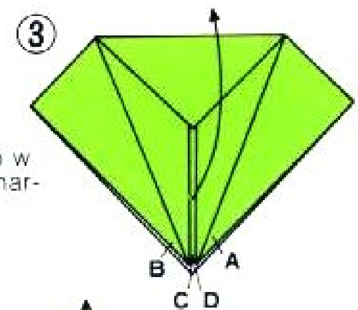


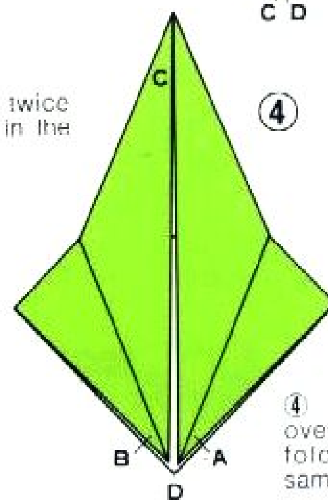
① Use a square piece of paper. Mark mountain and valley folds. Fold accordingly.



② Follow steps as marked.

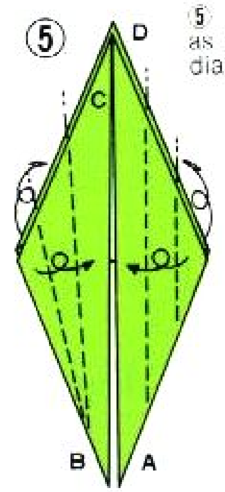
③ Pull out C and make ④.

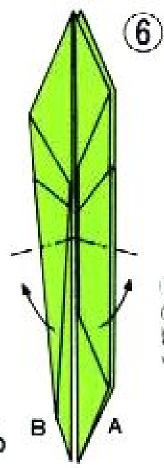




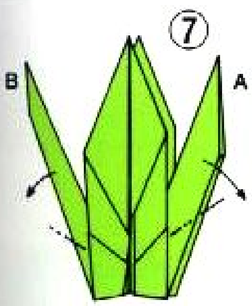
④ Turn over. D is folded the same as C.

⑤ Fold twice as shown in the diagram.

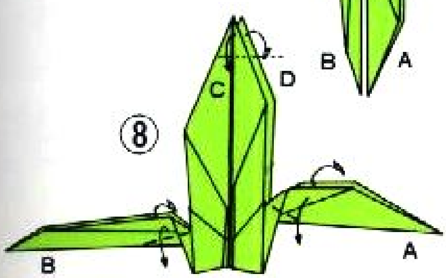




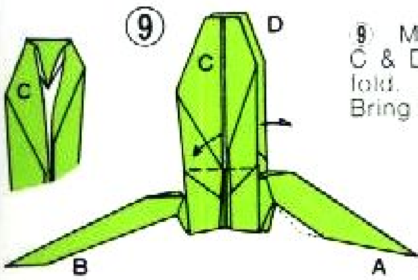
⑥ Pull out A & B between wings.



⑦ Fold A & B down.

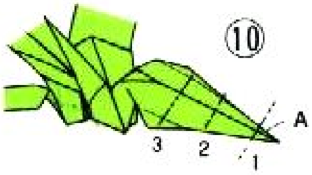


⑧ Spread A & B. Fold C & D inward.

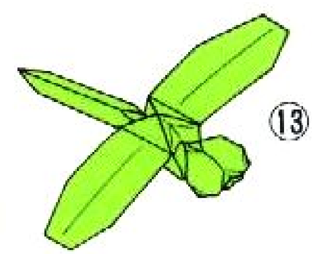


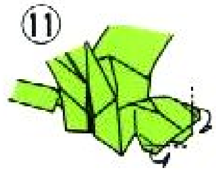
⑨ Make wings by folding C & D at the point of valley fold.
Bring A out to the dotted line.

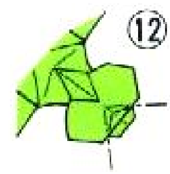
⑩ Fold the corner of A inward. Make double tiered face by folding on mountain and valley folds.



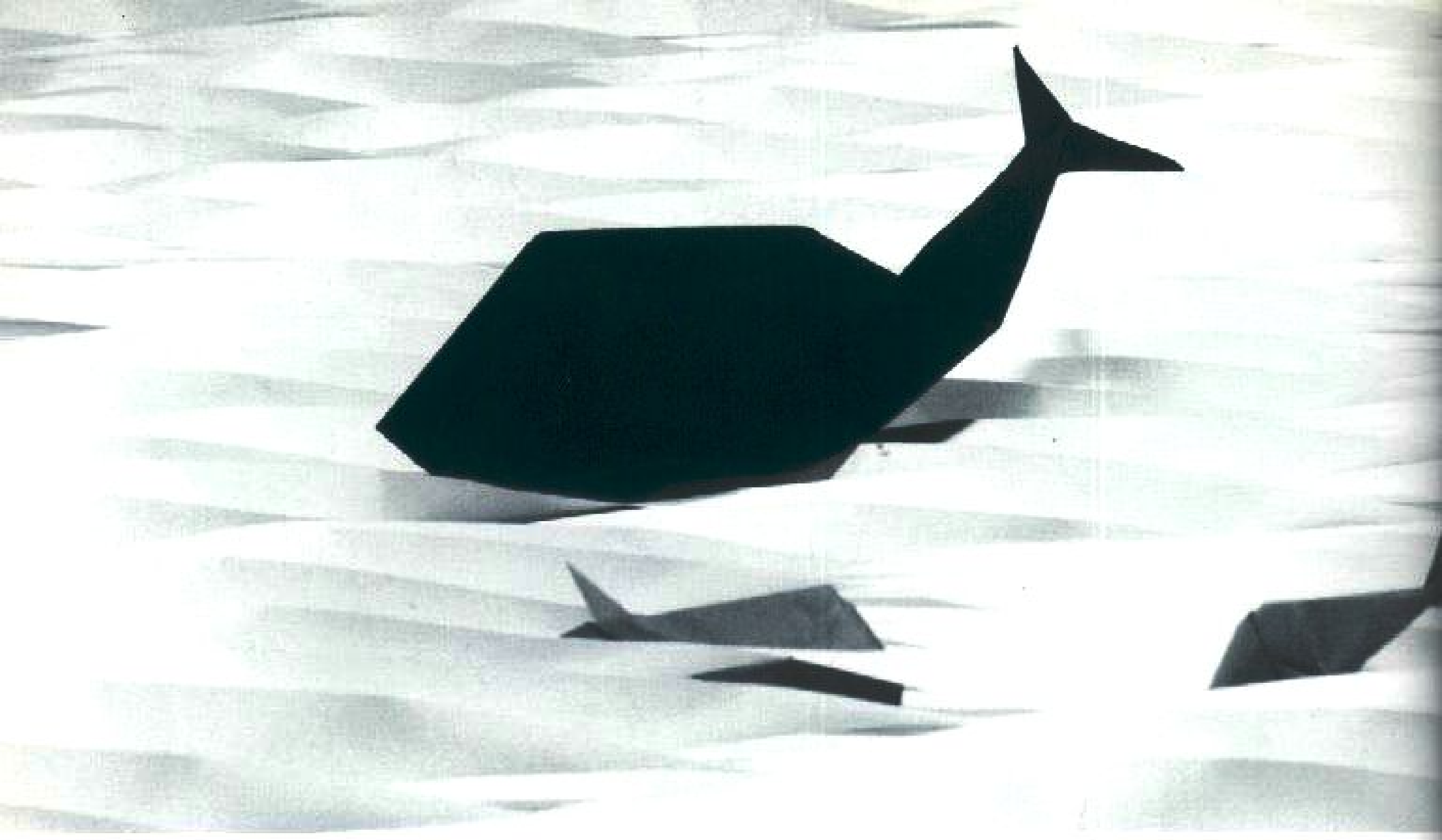
Finish



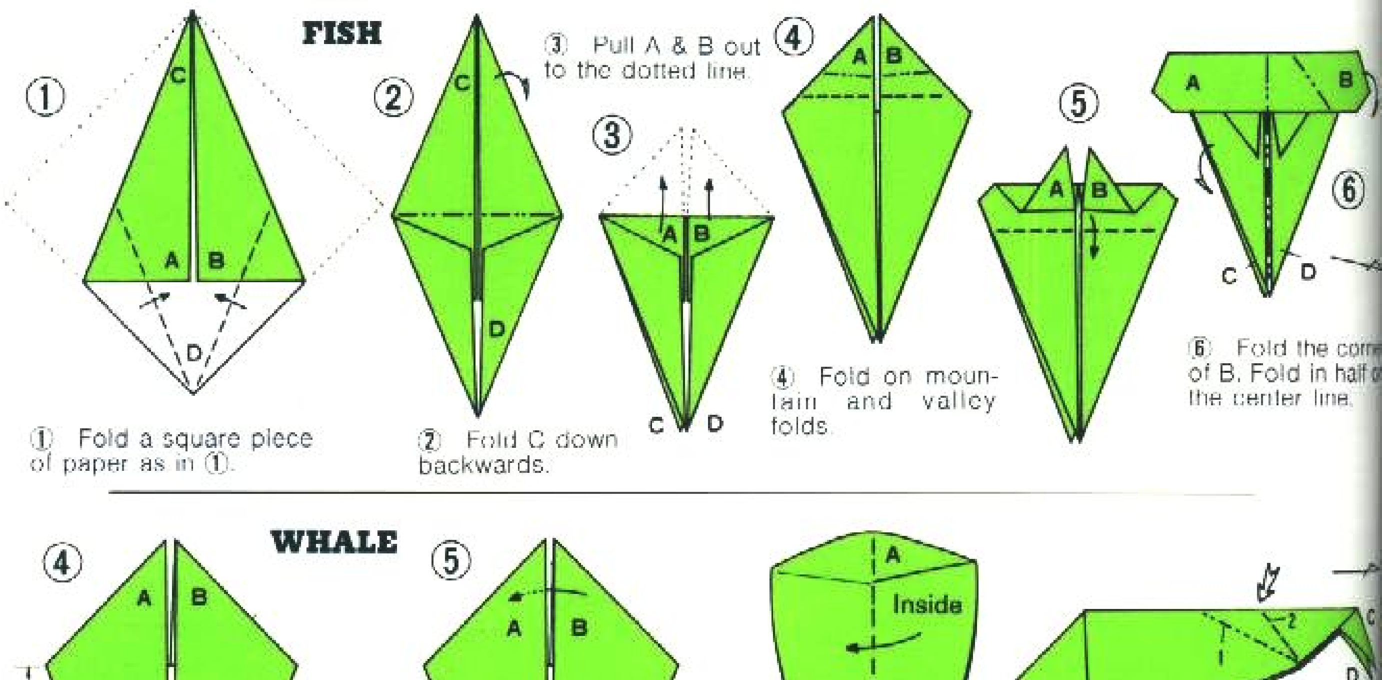




Make eyes following steps ⑪ and ⑫.



FISH



① Fold a square piece of paper as in ①.

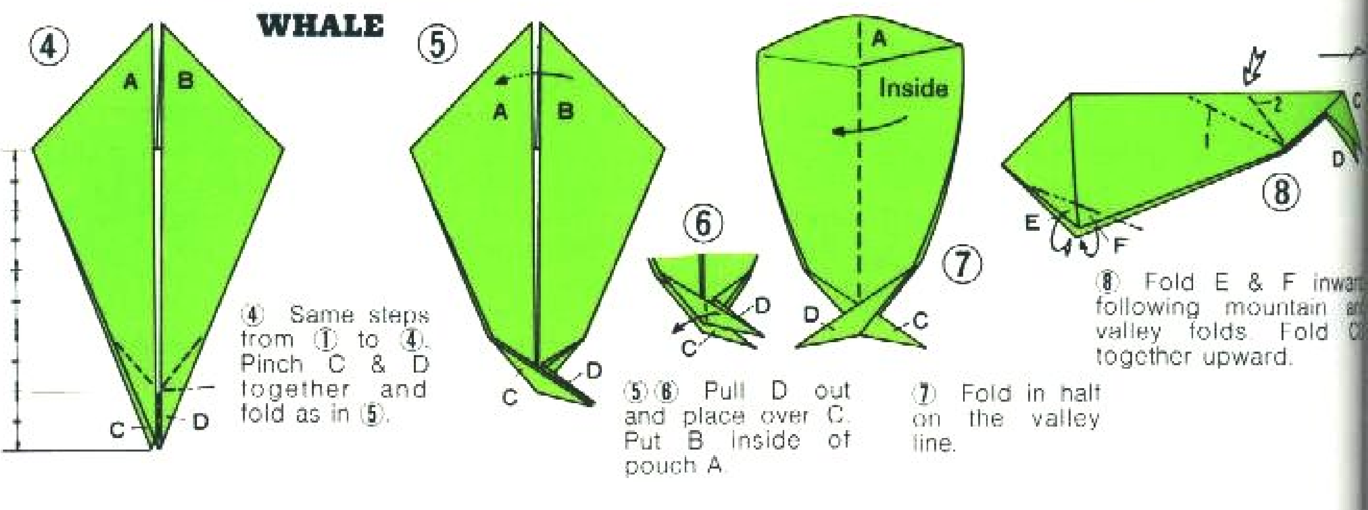
② Fold C down backwards.

③ Pull A & B out to the dotted line.

④ Fold on mountain and valley folds.

⑥ Fold the corne of B. Fold in half o the center line.

WHALE



④ Same steps from ① to ④. Pinch C & D together and fold as in ⑤.

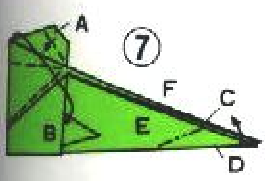
⑤⑥ Pull D out and place over C. Put B inside of pouch A.

⑦ Fold in half on the valley line.

⑧ Fold E & F inwar following mountain an valley folds. Fold C together upward.



WHALE AND FISH

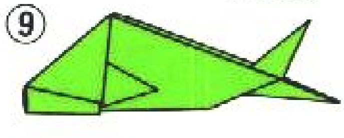


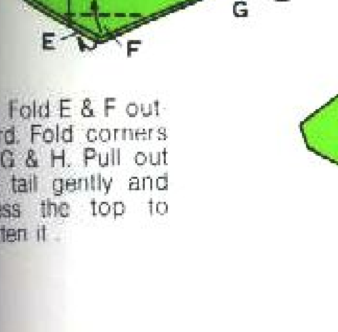
(7) Put corner of A in pouch of B. Fold C & D together between E & F.



(8) Fold D down on the dotted line.

Finish





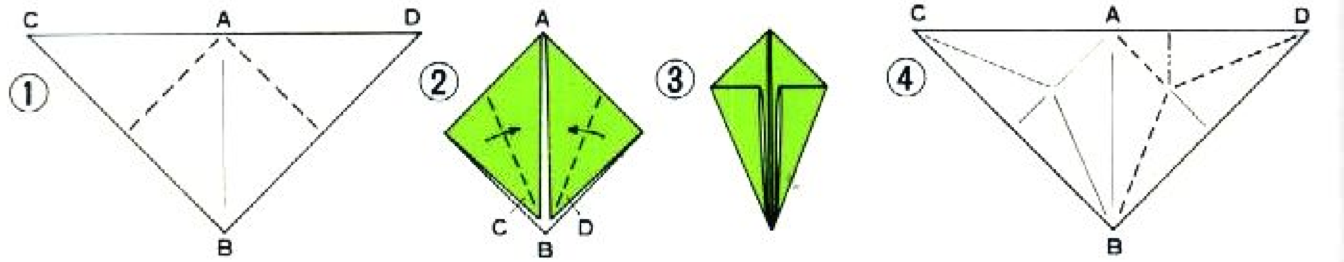
(9) Fold E & F outward. Fold corners of G & H. Pull out the tail gently and press the top to flatten it.

Finish

Let us make a whale, the biggest animal of all and a tiny fish.

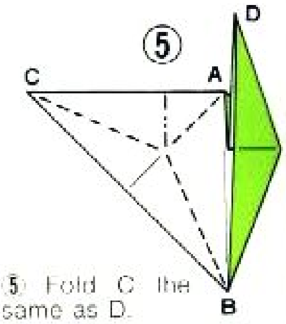
First, you should learn the folds on a piece of paper about 15 centimeters (6 inches) square and then you could use a piece of fancy paper and make one as large as you like. When you use this type of paper, it is advisable to dampen it to make it more pliable.

In using bigger sheets of paper, take care to fold them roughly in order to avoid making wrinkles. This will project a good image of the animal as a whole. If you make the abdomen round, the whale will look as if it is swimming gracefully with a balanced movement.

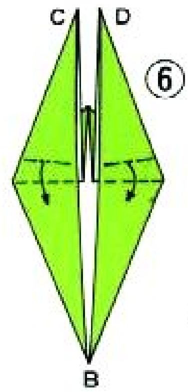


Make an isosceles triangle out of a square piece of paper. Follow steps ①—③ shown in the diagrams, then open it up to make ④.

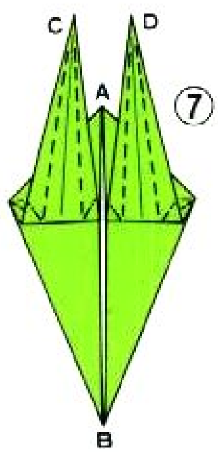
④ Follow folding lines and fold D as in ⑤



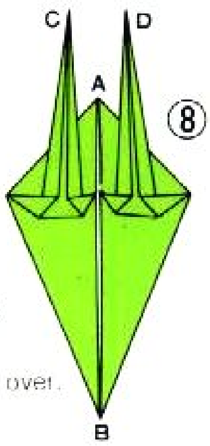
⑤ Fold C the same as D.



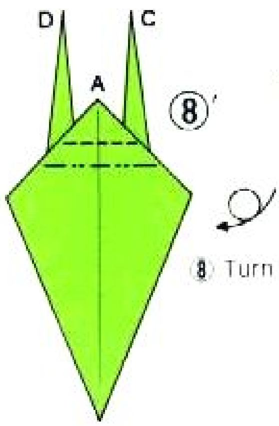
⑥ Fold C & D according to mountain and valley folds.



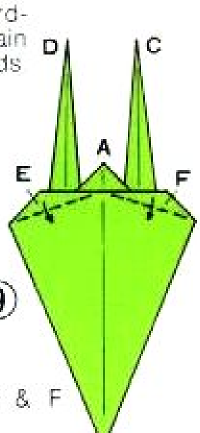
⑦ Make thin tentacles by folding C & D as shown in the diagram.



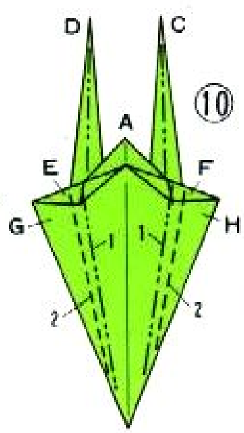
⑧ Turn over.



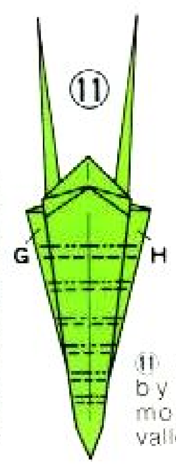
⑧' Fold according to mountain and valley folds.



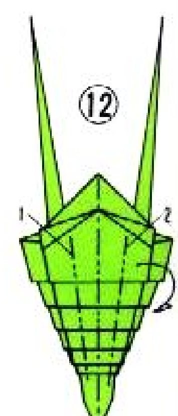
⑨ Fold E & F down.



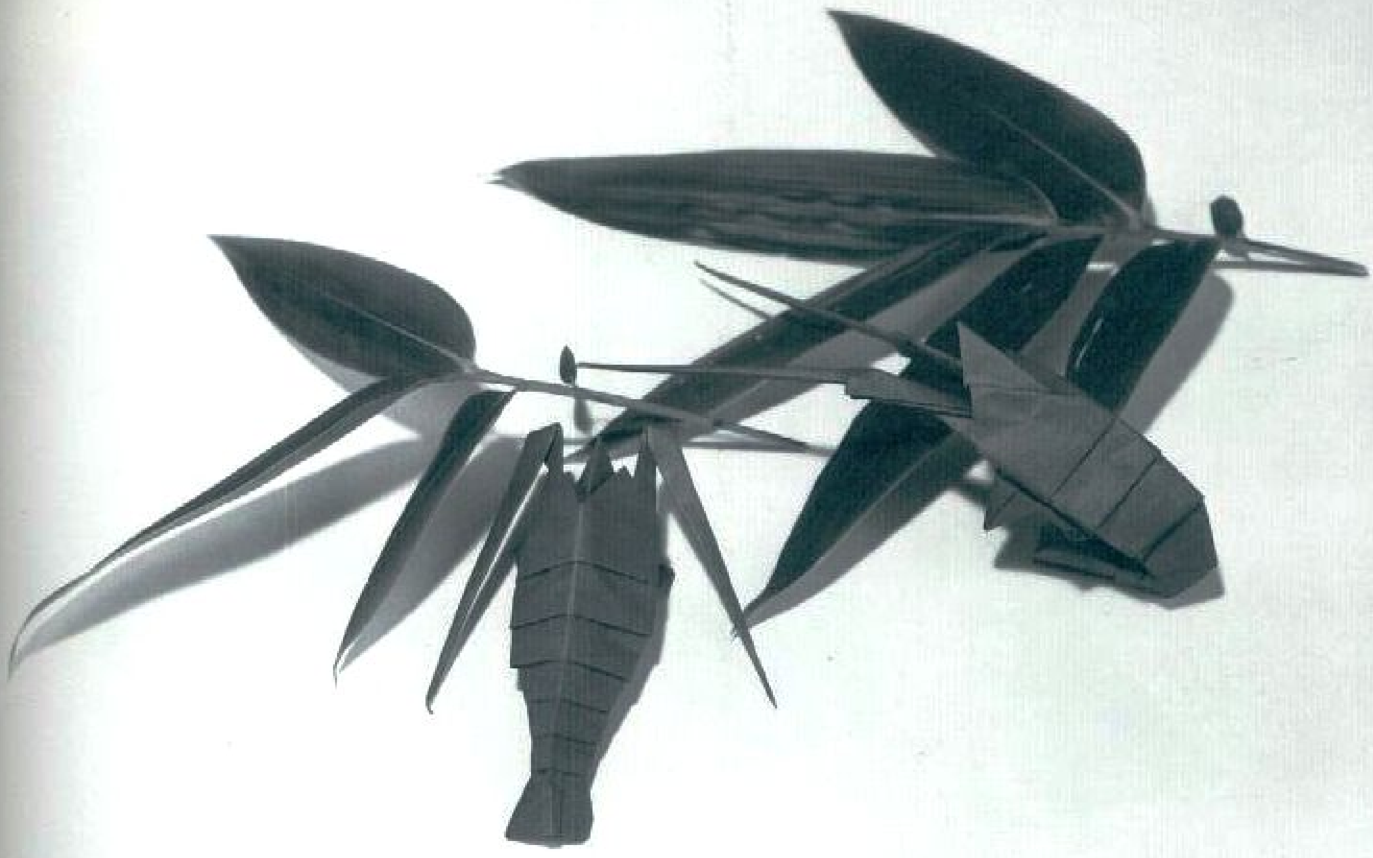
⑩ Pinch C & D along mountain folds. Fold the mountain folds 1 and try to line them up with mountain folds of C & D. Then, fold the valley folds 2 and bring G & H outward.



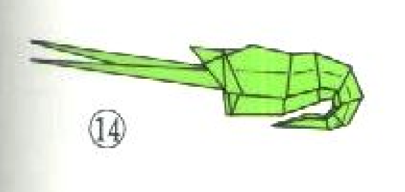
⑪ Make pleats by folding mountain and valley folds.



⑫ Mark mountain folds 1 & 2 and fold on the center line.



⑬ Fold A inward on the mountain fold 1 and push it out at the valley fold 2. Hold at ○ mark with your fingers, and pull out each pleat in direction of arrows. The result should look like ⑭.



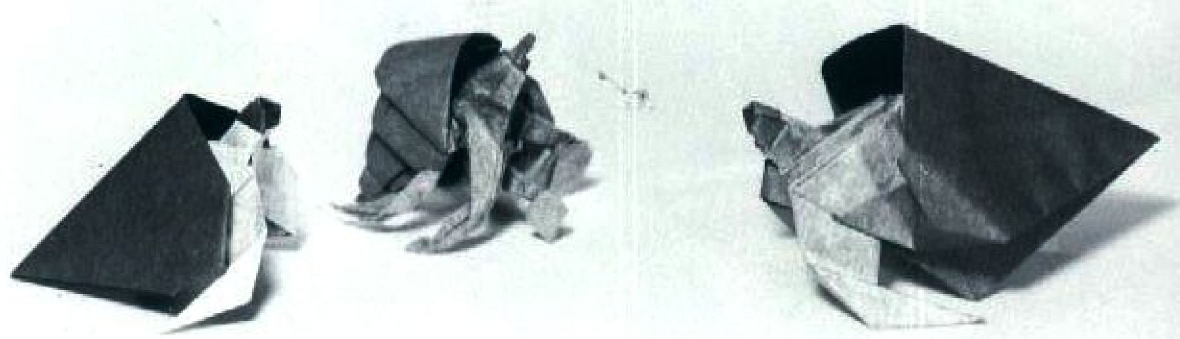
Finish

LOBSTER

In Japan, a stately red lobster is an indispensable part of the New Year's decoration.

Let's make a lobster using a larger sheet of red paper. It can be decorated with pine needles and bamboo leaves made from green paper.

To capture the characteristics of the lobster, I have used a triangular shaped piece of paper. If you use thin paper, you can simply fold it into half as shown in ①.



HERMIT CRAB

There are many lively creatures on the beach in the summer. Among them are the amusing hermit crabs which I never tire of watching.

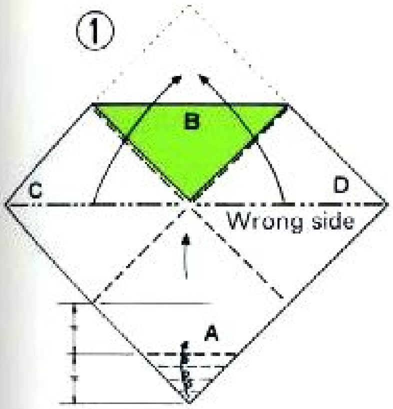
The hermit crab has claws like a crab. With its protruding eyes and minute antenna, it cautiously walks around and at the slightest noise or movement, it quickly withdraws into its shell, slamming the entrance shut with its big claws.

The head and claws of the hermit crab are similar to those of the shrimp or crab but it must live in a spiral shell to protect its soft body. As it grows bigger, it must move to a larger shell. That is why in Japanese, its name means "house borrower".

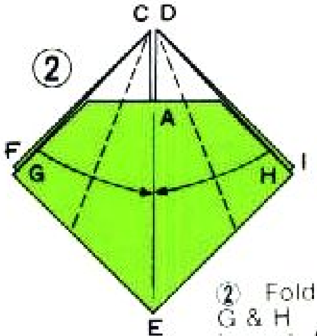
Hermit crabs which live on the beach are amphibious like crabs. Others live only on the land and there are some which are good at climbing trees.

You can make your hermit crab come to life by the way you fold the legs or by changing their direction. You can use two different colors of paper, back to back, to show the contrast between the body and the shell. The head or legs can be pushed in or out of the shell to alter the appearance. In the photograph above, the hermit crab in the middle is folded more realistically.

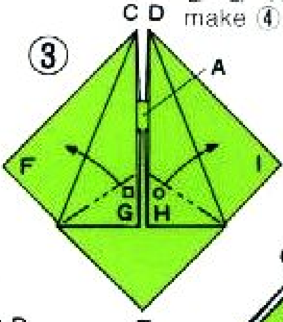
〔A〕



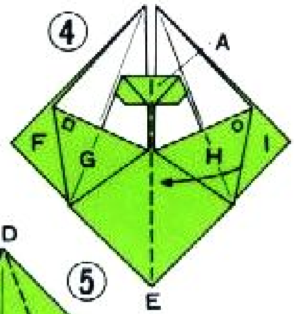
① Make mountain and valley folds on a piece of square paper.
Fold B first, and fold A by rolling up as shown.
Make ② as in the diagram.



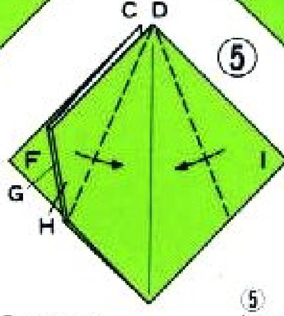
② Fold G & H inward.



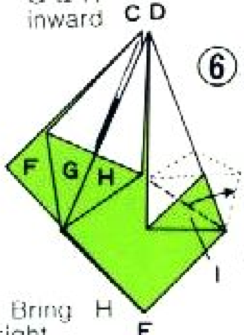
③ Open up G & H to make ④.



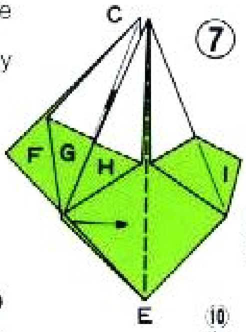
④ Bring H to left to cover G.



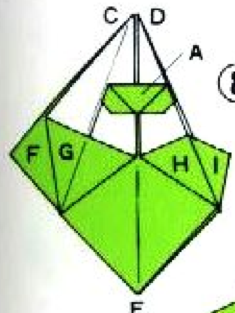
⑤ Fold H & I inward.



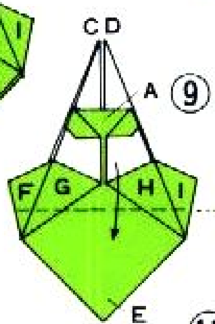
⑥ Open up I as shown.

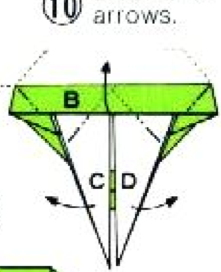


⑦ Bring H to right.

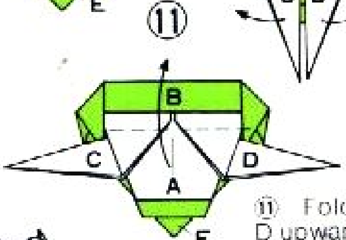


⑧ Follow the same steps ④, ⑤, ⑥ and ⑦ for left side.

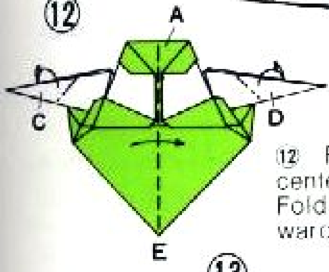




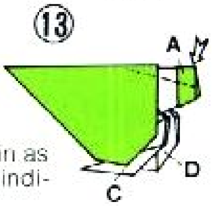
⑩ Pull B out to the dotted line. Fold C & D in direction of arrows.



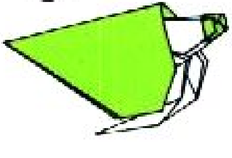
⑪ Fold A, C & D upward on the valley line.



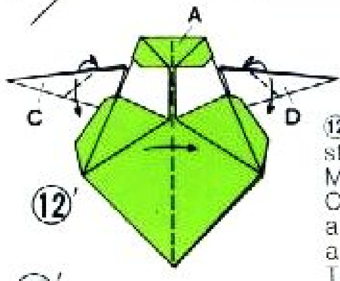
⑫ Fold at the center into half. Fold C & D outward.



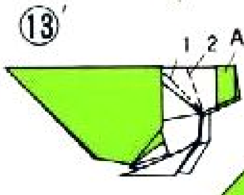
⑬ Push A in as the arrow indicates.

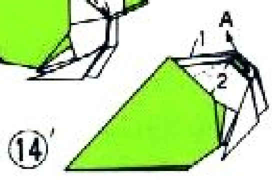


〔B〕



⑫′ Follow same steps ①-⑫ of 〔A〕. Make valley folds on C & D. Open up the angles and fold C & D as the arrows indicate. Then fold in half on the center line.





⑬′⑭′ Fold A on mountain fold 1, and bring it back at the valley line 2.

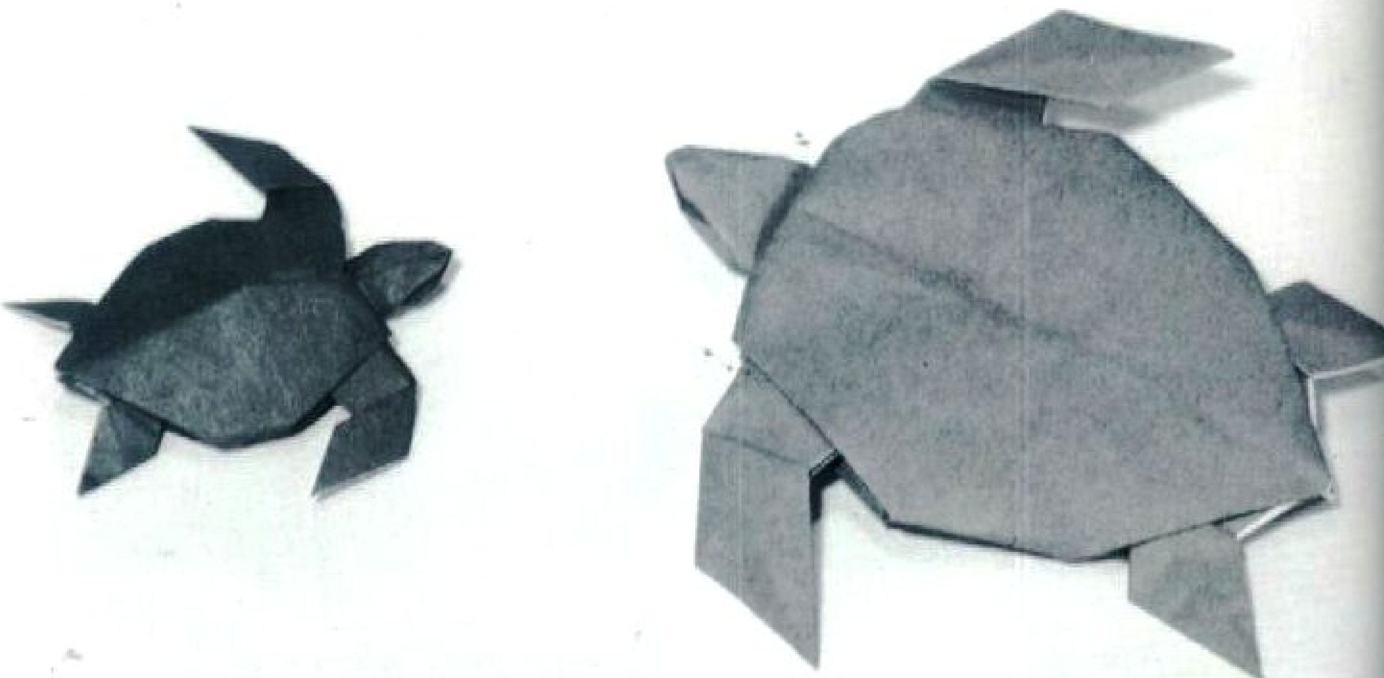


⑮′ Make eyes by folding the corner of A. Pinch the two sheets inside of O, and pull △ out to the dotted line.
The shell will puff up. Press down to desired appearance.



Finish

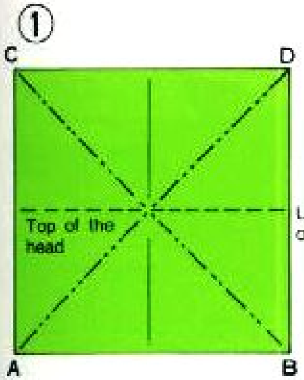
TURTLE



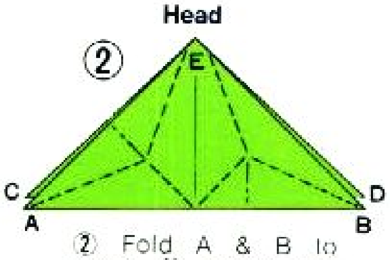
There are many approaches to the art of folding origami, such as the realistic, the diagrammatic or the abstract. Here, I have made a realistic sea turtle like a sketch from life.

In the artistic approach to folding origami, you must first decide on the object that is to be folded and design the folding lines accordingly. You cannot just come up with the figure by vaguely playing with the paper.

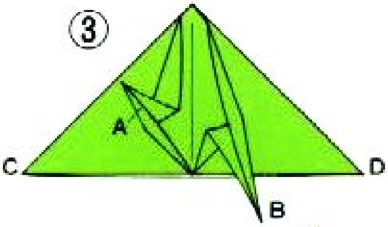
We try to fold each part with meaning. In this case, it means to focus on the head of the turtle. The four corners the paper will become its front and real legs.You will find it easy to master if you compare each part as you fold it to the finished turtle shown above.

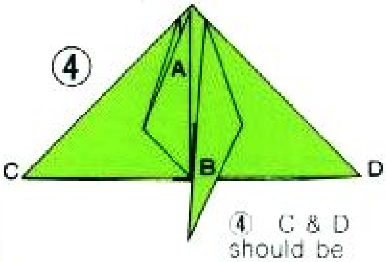


① Mark mountain and valley folds on a square piece of paper

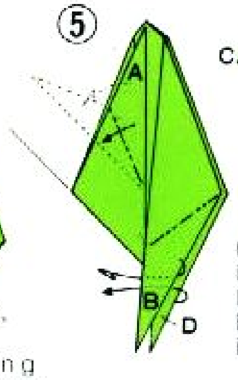


② Fold A & B to make ③ (make the underside of the head wider).

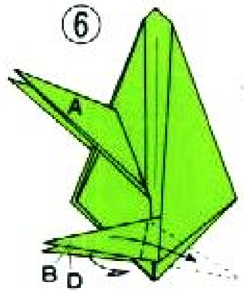




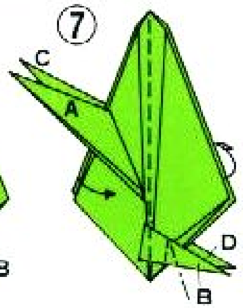
④ C & D should be folded the same as A and B.

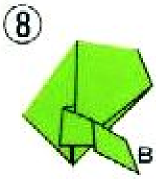


⑤ A & C (behind A) should be folded to mach the dotted line.
B & D should be the folded inward.

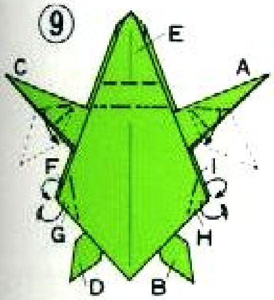


⑥ Bring B & D back to right.

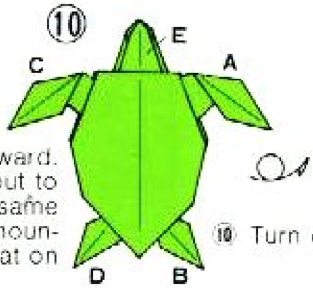




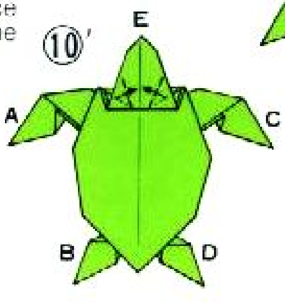
⑦ Make rear legs out of B & D, shown in ⑧. Bring the left side to right on the surface and right side to left on the back.



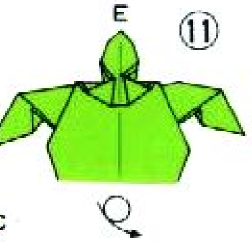
⑨ Fold F & G, I & H inward. Open up A and fold it out to the dotted line. Do the same with C. Fold valley and mountain folds to make a pleat on the neck.



⑩ Turn over.

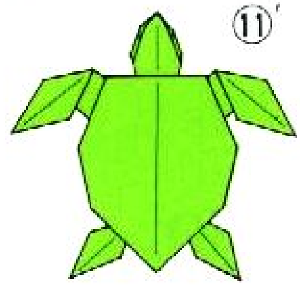


⑩′ Make the neck narrower at the joint as shown.

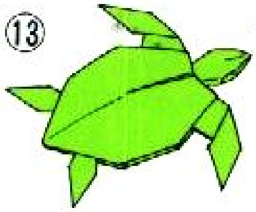


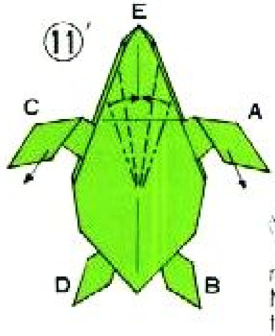
〔A〕

Finish

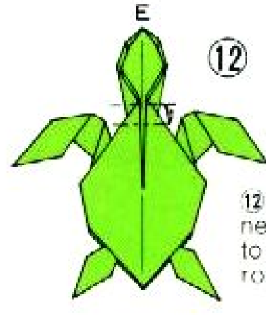


〔B〕 **Finish**

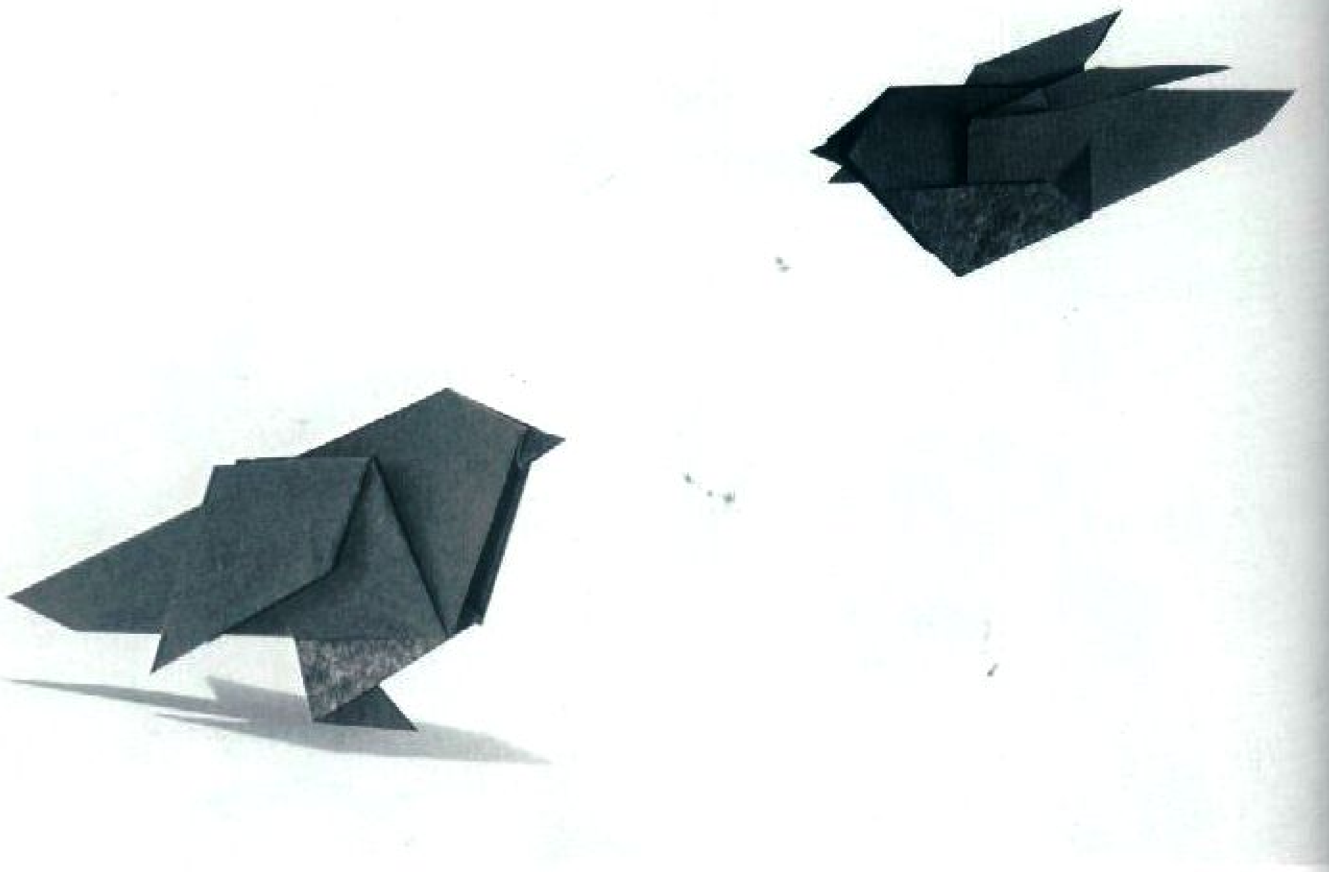




⑪′ Follow steps ①-⑩ of 〔A〕. Then stretch out the neck.
Make mountain and valley folds on L.



⑫ Make a pleat on the neck. Follow ⑩′ of 〔A〕 to make the neck narrower.



BIRD

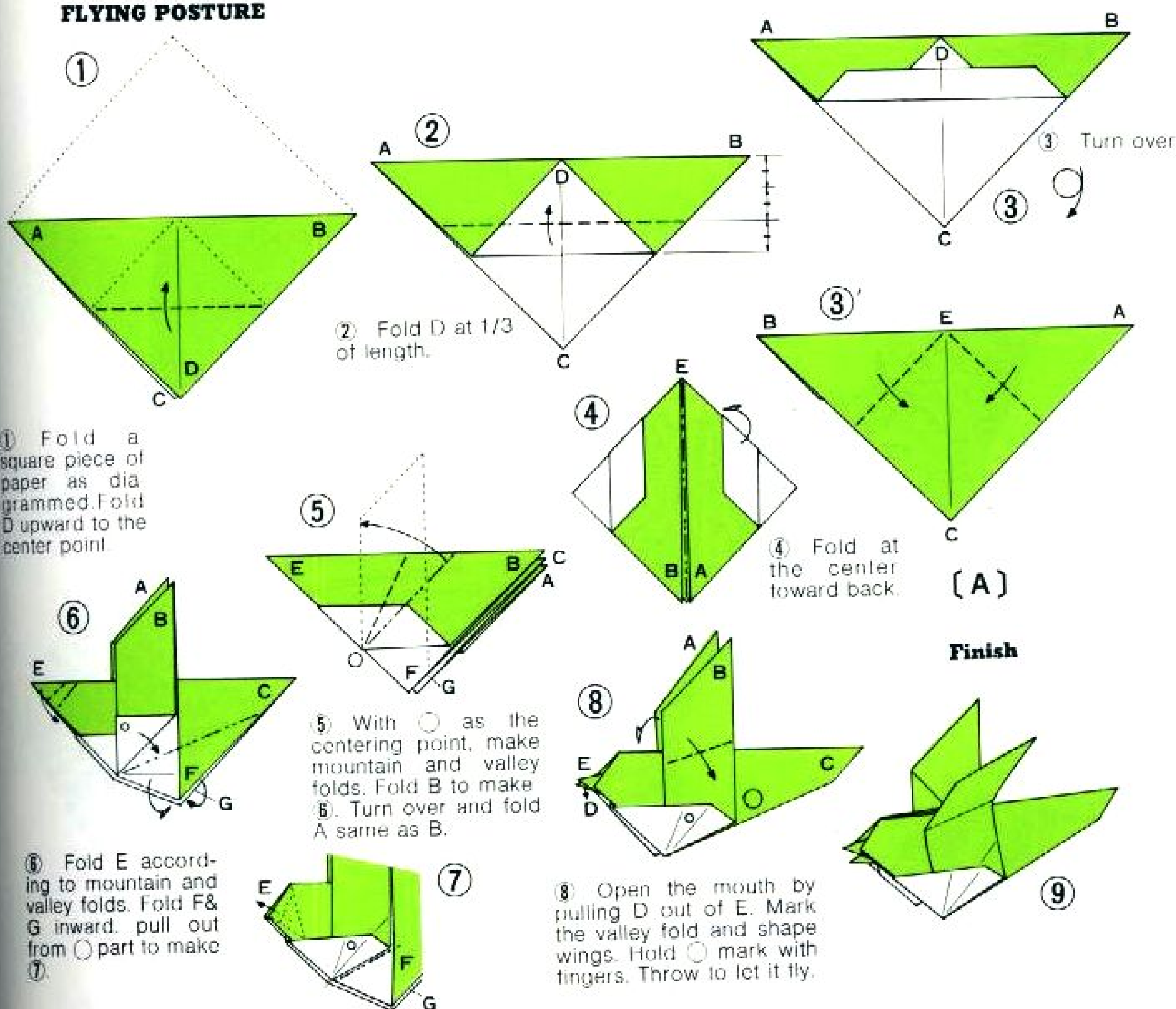
When the warm sunshine bathes the fresh green leaves, baby birds start their life under the watchful eyes of their parents. Even when they become big enough to sit on the branches, they continue to beg for food by fluttering their wings and cheeping noisily.

Here, I decided to fold a baby bird like the ones that can be seen in the garden or the woods.

The flying bird will fly very well because of its overall balance.

You can make various kinds of birds such as the bush warbler, tit or sparrow by slightly altering the shape of the beak or the wings. You can match the color of the birds by your choice of paper.

FLYING POSTURE



① Fold a square piece of paper as diagrammed. Fold D upward to the center point.

② Fold D at 1/3 of length.

③ Turn over.

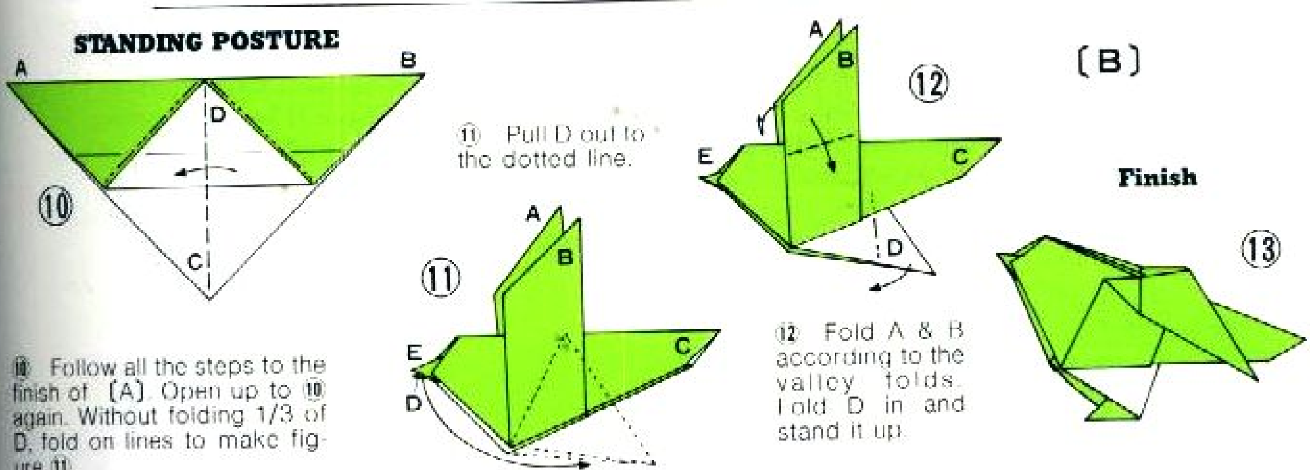
④ Fold at the center toward back.

⑤ With ○ as the centering point, make mountain and valley folds. Fold B to make ⑥. Turn over and fold A same as B.

⑥ Fold E according to mountain and valley folds. Fold F& G inward. pull out from ○ part to make ⑦.

⑧ Open the mouth by pulling D out of E. Mark the valley fold and shape wings. Hold ○ mark with fingers. Throw to let it fly.

STANDING POSTURE



⑩ Follow all the steps to the finish of 〔A〕. Open up to ⑩ again. Without folding 1/3 of D, fold on lines to make figure ⑪.

⑪ Pull D out to the dotted line.

⑫ Fold A & B according to the valley folds. Fold D in and stand it up.

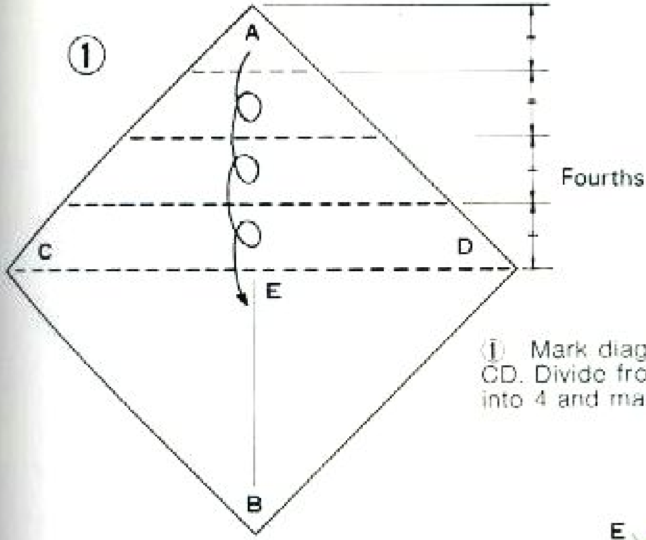


FLYING DOVE (Glider)

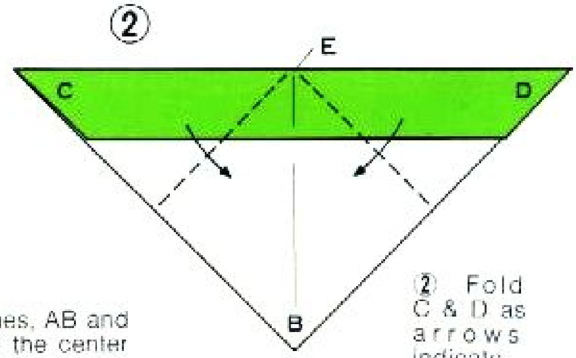
Everyone likes origami which moves. However, just to make it move is too mechanical and lacking in imagination. Therefore, after studying the ecology and functional movements of birds, I tried to include these ideas in the shape of a dove in flight. The purpose is to not only make it fly fast and far, but to capture its life rhythm and appear beautiful at the same time.

Both of these glider doves, in figures ② and ④ fly very well. After you finish folding the shape of the dove, you can spread it out as in figure ④ which will make it fly even better. The center of gravity in the case of doves lies in the front section and they will only fly if you hold them and throw them as shown in the photograph above.

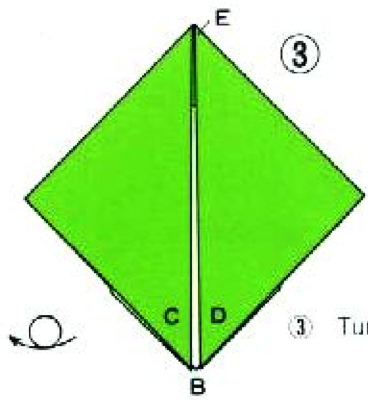
You will be able to enjoy a variety of flying movements with ② and ④ because there is a difference in the center of gravity, speed and lift in each one of them.



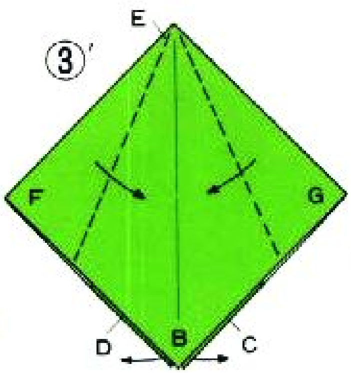
① Mark diagonal lines, AB and CD. Divide from A to the center into 4 and make rolled folds.



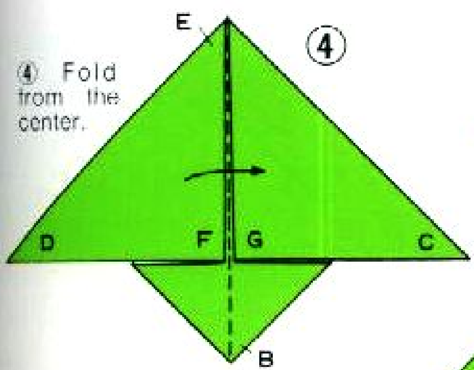
② Fold C & D as arrows indicate.



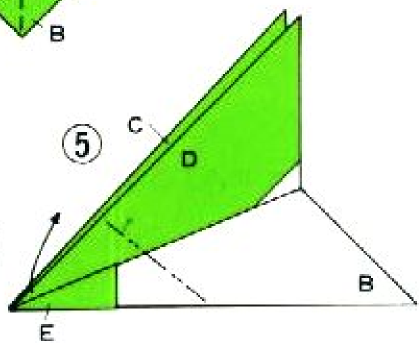
③ Turn over.



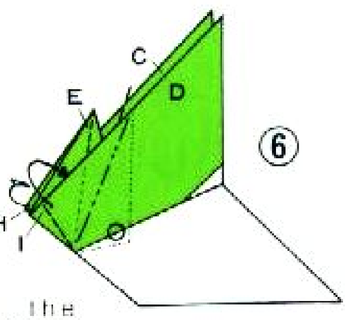
③′ Fold F & G inward. Open up C & D.



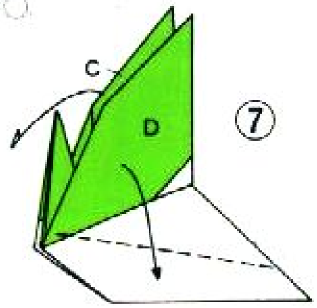
④ Fold from the center.



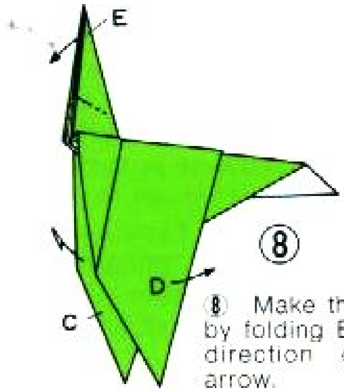
⑤ Fold E between C & D.



⑥ Make the mountain fold. Push corners of H & I into the inside of ◯.

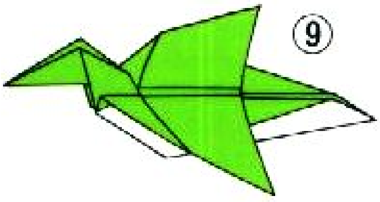


⑦ Make the valley fold. Open up C & D and fold them on the valley folds.

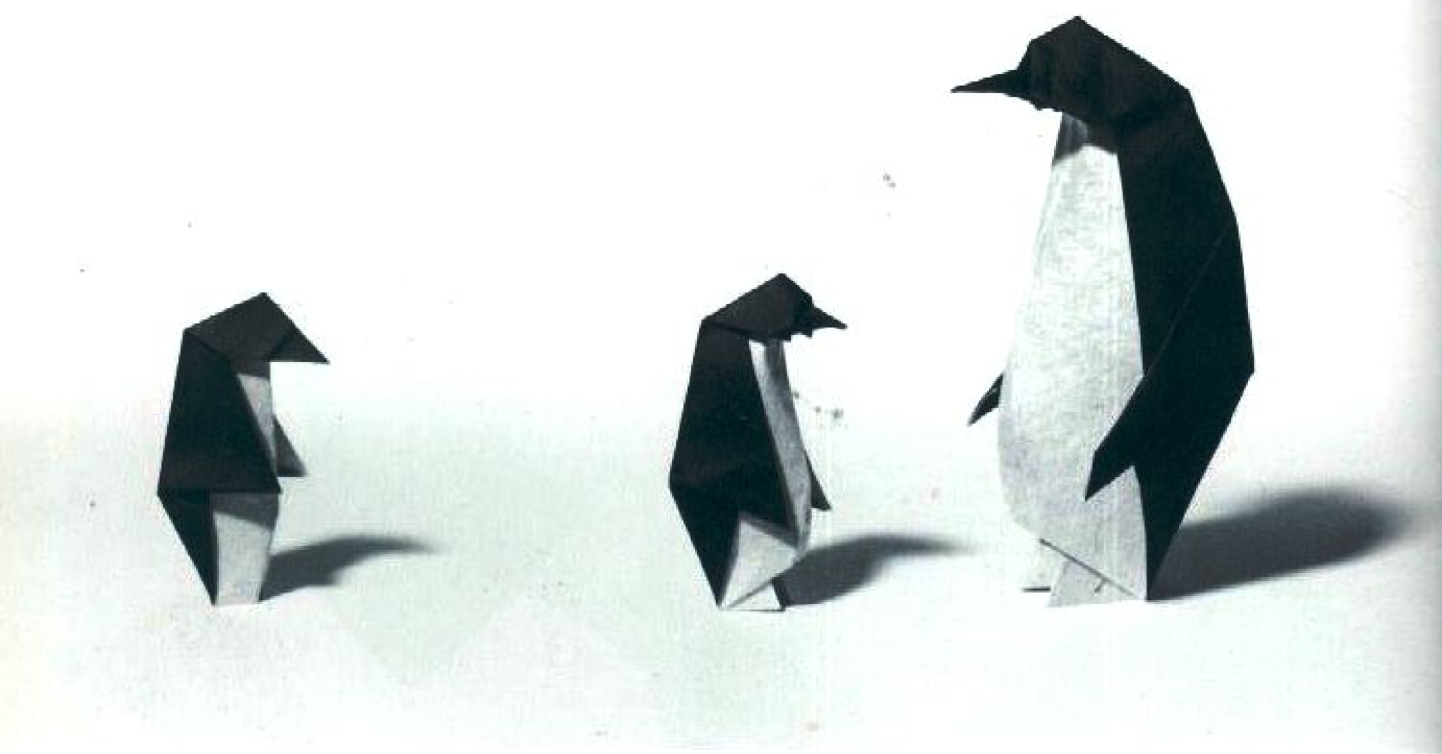


⑧ Make the head by folding E in the direction of the arrow.

Finish



Throw the bird lightly holding the tail.



PENGUIN

Origami is divided between the types which can be made by eveyone and those which especially please young children.

There is a certain uniqueness in origami folded by children even though the pieces may not be very precisely made. It comes easily to them to fold something with a natural theme. Awareness of perceptual constancy,nurtured by repeated folding, helps them absorb scientific and artistic values which will blossom into a spirit of independence.

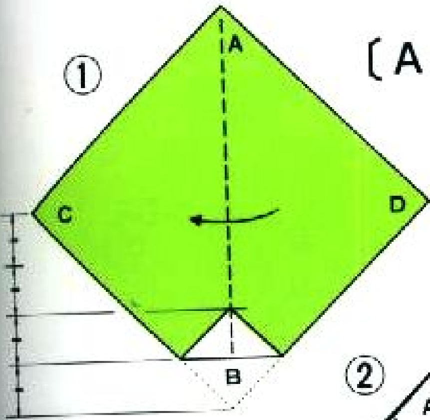
I tried to fold this penguin in a really abstract way and by changing the proportions of the head and wings, you can make penguins with different expressions.

〔A〕 shows how to fold a baby penguin. In 〔B〕, folding the section under the wings makes it look more realistic from the head to the back. The straight line from the chest to the feet is strongly accentuated as is shown in diagram ⑤. If you fold the corner at the bottom right hand side, the whole appearance is spindle shaped which really makes it look like a penguin. In 〔C〕, I made the head more true to life. In 〔D〕, I made the feet by refolding the part in diagram ⑨ as illustrated. If you round off the figure from the neck to the chest as shown in ⑫, the characteristics of the penguin become more pronounced.

Thus, it is possible to express artistic values even in diagrammatic forms. Even if it is designed for children, you can find great art in these simple origami.

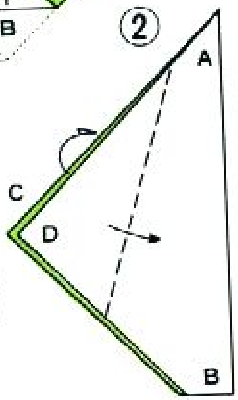
[A]

①

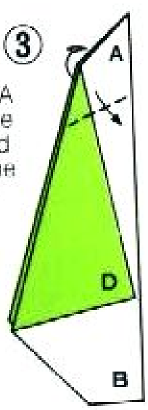


① Make a diagonal crease A B on a square piece of paper. Fold B along the diagonal line as shown. Bring D over C and fold again in the direction of the arrows.

②

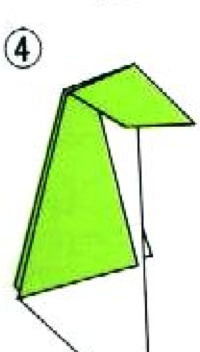


③



③ Open A up a little and fold over on the valley fold.

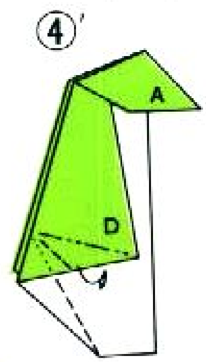
④



Finish

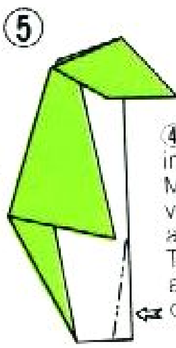
[B]

④′

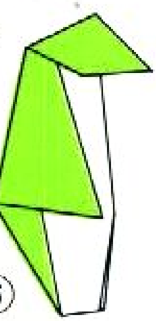


④′ Continue folding from ④ of [A]. Make mountain and valley folds on D and C on the back. Then fold D and C as shown in the diagram.

⑤



⑤ Fold inward on the mountain fold.

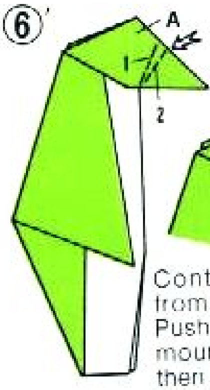


⑥

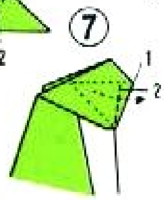
Finish

[C]

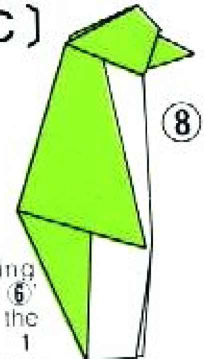
⑥′



⑦



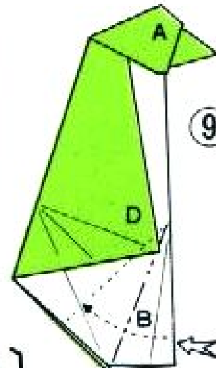
Continue folding from ⑥ of [B], ⑥′ Push A in on the mountain fold 1 then pull it out on the valley fold 2



⑧

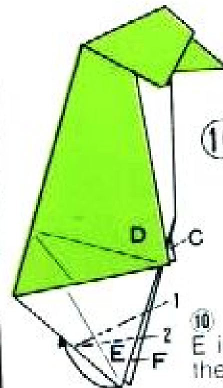
Finish

⑨ Follow steps to ⑧ of [C]. Open up B as in the diagram. Fold B in on the mountain fold.



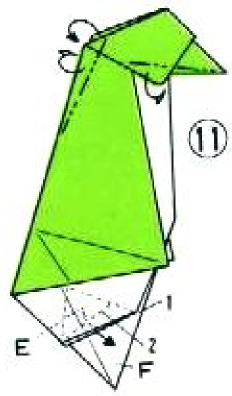
⑨

[D]



⑩

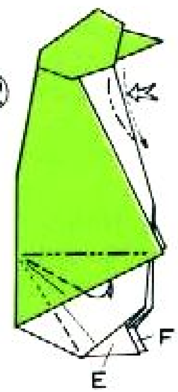
⑩ Fold E in on the mountain fold.



⑪

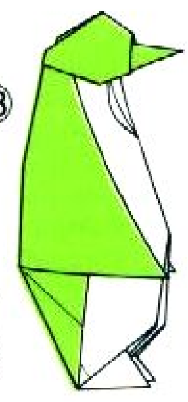
⑪ Pull out folded E on the dotted line 2 to make a foot. Fold F in the same way to make the other foot.

⑫



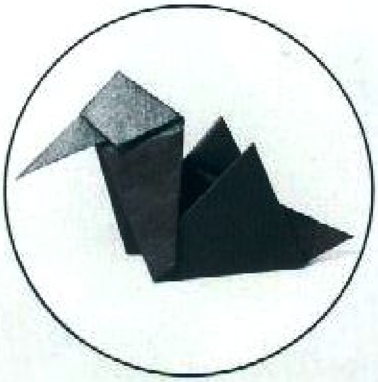
⑫ Fold the wings inward. Make the body round by inserting your finger. Push the chest in softly to assume the posture.

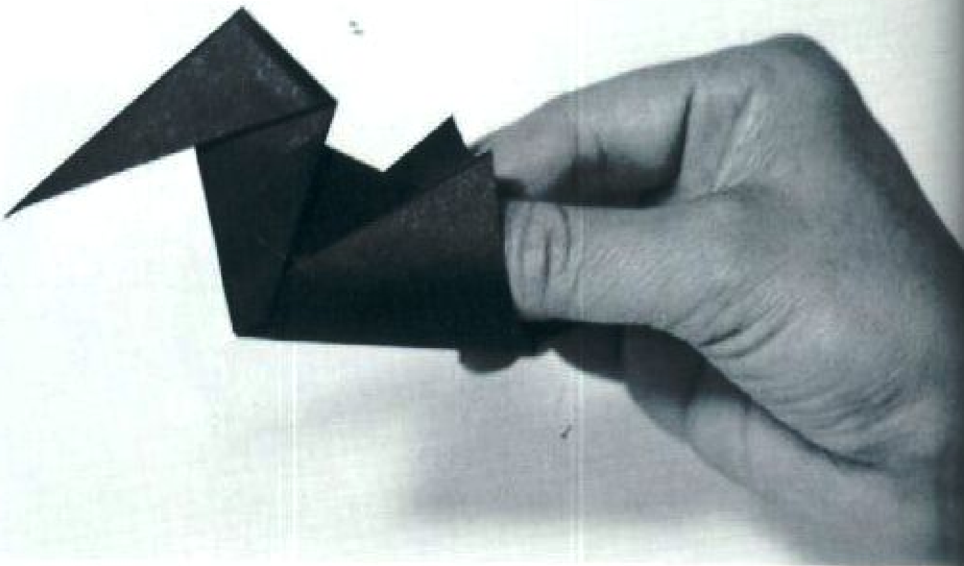
⑬



Finish







CROW

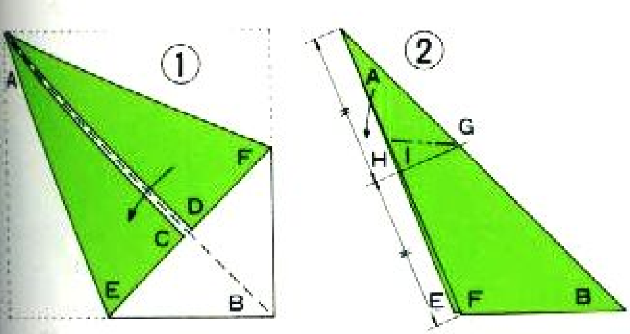
It is only recently that origami has gained recognition from the standpoint of art and education.

Until now, educational origami consisted of the familiar Orizuru, helmet and balloon which came out exactly the same when folded by anyone. When the International Arts and Crafts Education Conference was held in 1954 under the sponsorship of UNESCO, this traditional type of origami was not accepted as being adequate educational material. Fortunately, I was given an opportunity to explain and demonstrate my theory of Creative Origami with free expression and this was accepted.

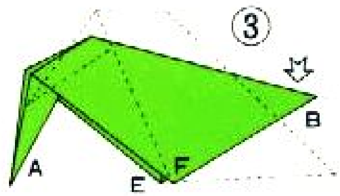
The crow introduced here is folded with a completely new idea. Every angle and fold is well thought out and planned with a sense of beauty and deep feeling. When I fold paper, I try to express not only the beauty of the creatures in nature but I also regard them from a scientific point of view. It helps to understand basic ideas such as the function and structure of the creatures, the laws of nature and so forth.

In making this crow, it was necessary to take into consideration such things as circular motion, rebound movement and the projected curve of item thrown into the air. Jumping origami, like those shown on pages 22 and 23 and the crows here and on the next page are made from the most basic folds. By closing or widennig E&F in (B), you can balance the folded crow. It is also fun to adjust the mountain fold line in diagram ② and see how it changes the balance between the head and the body.

[A]

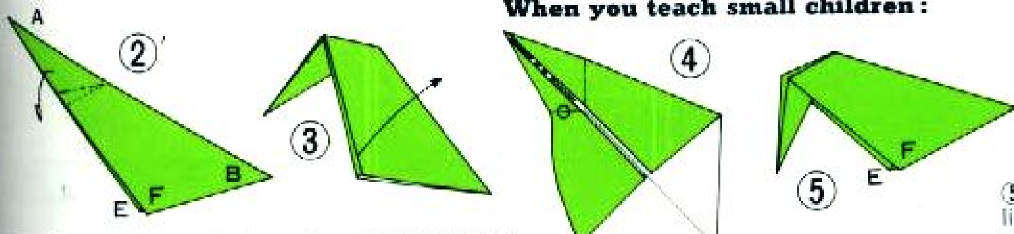


② Mark G by bringing the tip of A to F. Mark the mountain fold carefully. Fold A between the sheets.

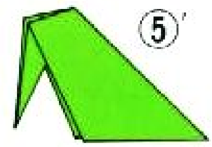


③ When you press point B with your finger, it will move forward.

When you teach small children :

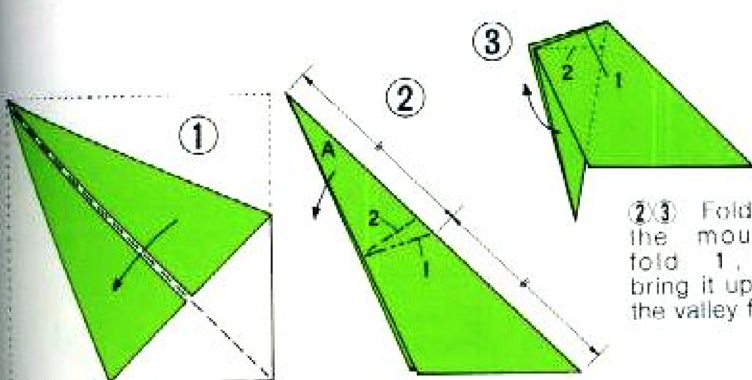


②' Fold A forward along the mountain fold. Then open it up as in ④. Make the valley fold marked ○.

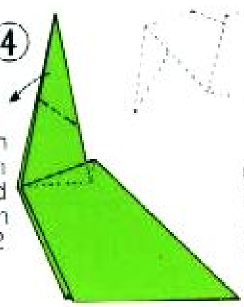


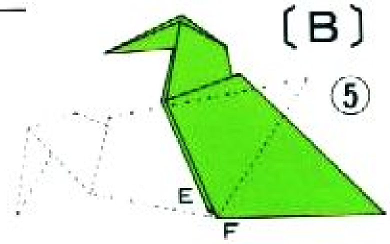
⑤' Fold on the dotted line shown in ②'. The center of gravity moves backward so that it will stand up.

[B]



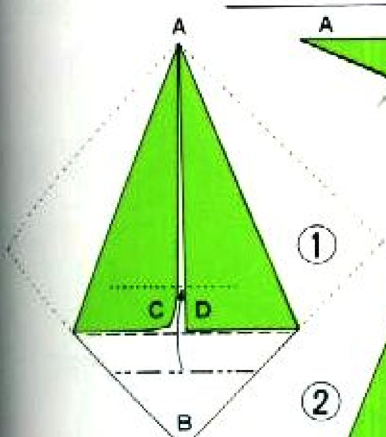
②③ Fold A on the mountain fold 1, and bring it up from the valley fold 2.



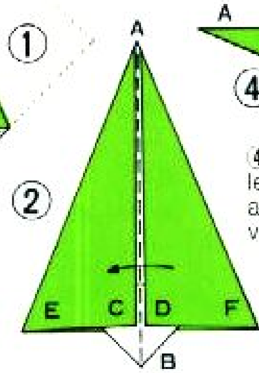


⑤ When you spread F & F out, the center of gravity moves forward so that it will move downward as shown by the dotted line.

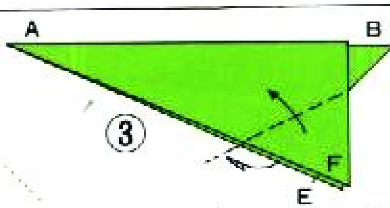
[C]



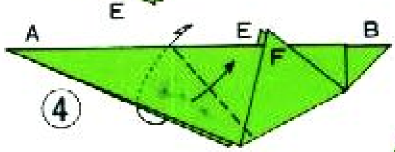
Fold a square piece of paper as in ①. Fold B on the mountain and valley folds. Put it under C & D.



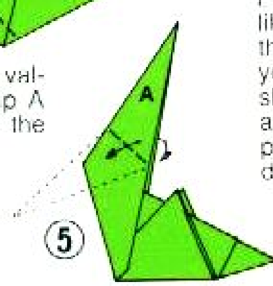
② Bring F over E.



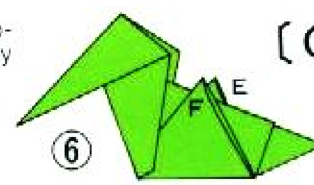
③ Fold F & E upward on the valley folds.



④ Fold on the valley fold, open up A and cover over the valley fold.

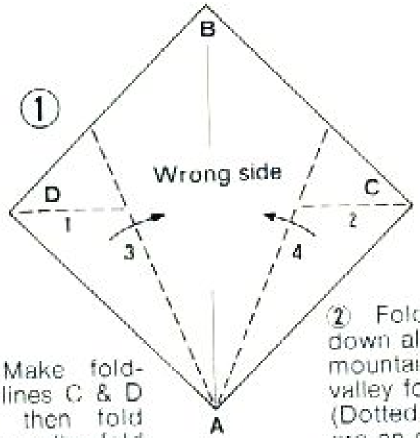


⑤ Open up A again and bring it over as indicated by the dotted lines to make the head.

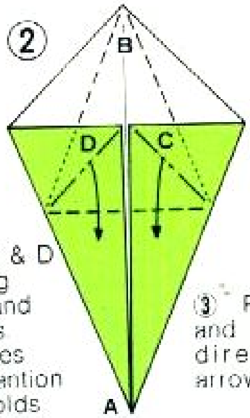


⑥ If you put your fingers in F & F and move them, it looks like the crow is eating something stretching out its neck. If you are right-handed, you should put your thumb in F and your forefinger in F. Support the figure with your middle finger.

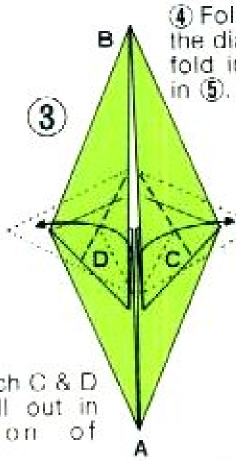
MOTHER CROW

① 

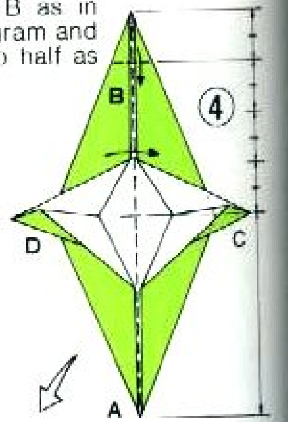
① Make folding lines C & D first then fold along valley fold 3 & 4.

② 

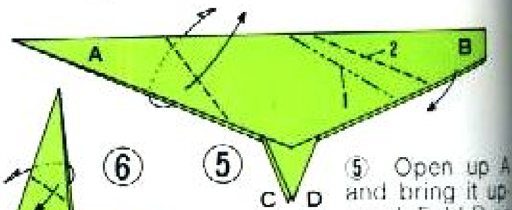
② Fold C & D down along mountain and valley folds (Dotted lines are an extention of valley folds of B.)

③ 

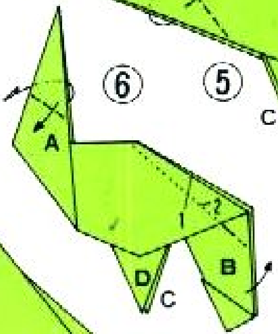
③ Pinch C & D and pull out in direction of arrows.

④ 

④ Fold B as in the diagram and fold into half as in ⑤.

⑤ 

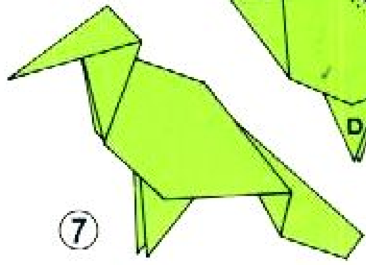
⑤ Open up A and bring it upward. Fold B on mountain fold 1.

⑥ 

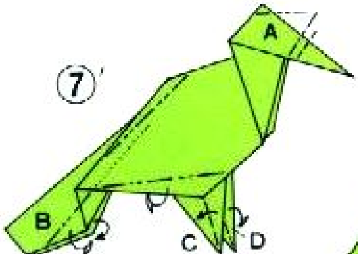
⑥ Open up A again and fold down. Fold B upward on the dotted line 2.

〔A〕

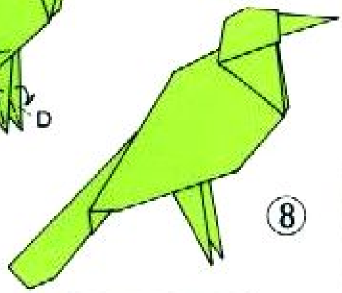
Finish

⑦ 

〔B〕

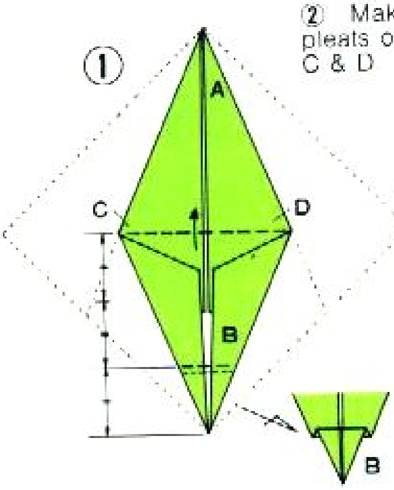
⑦' 

⑦' Follow steps from ① to ⑦ of 〔A〕. Arrange the shapes according to the suggested lines.

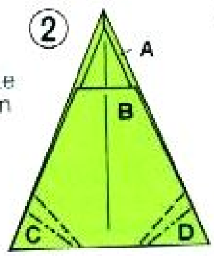
⑧ 

BABY CROW

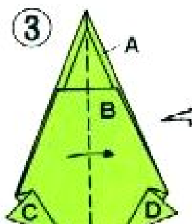
〔A〕

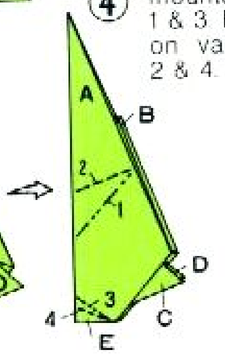
① 

① Fold as shown in diagram. Make a pleat on B and fold it upward.

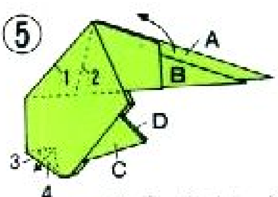
② 

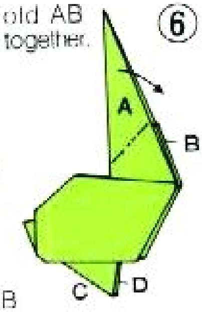
② Make pleats on C & D

③ 

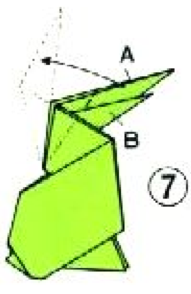
④ 

④⑤ Fold AB and E inside on mountain folds 1 & 3. Fold them on valley folds 2 & 4.

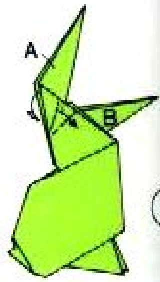
⑤ 

⑥ 

⑥ Fold AB down together.

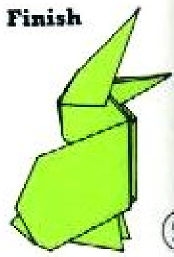
⑦ 

⑦ Bring A upward to position indicated by dotted lines.

⑧ 

⑧ Fold A toward the wrong side.

Finish

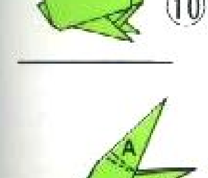
⑨ 



[B]

Finish





9' Follow steps 1 to 8. Make a small pleat on the beak. Fold the neck and feet to make them narrower.

MOTHER CROW AND BABIES

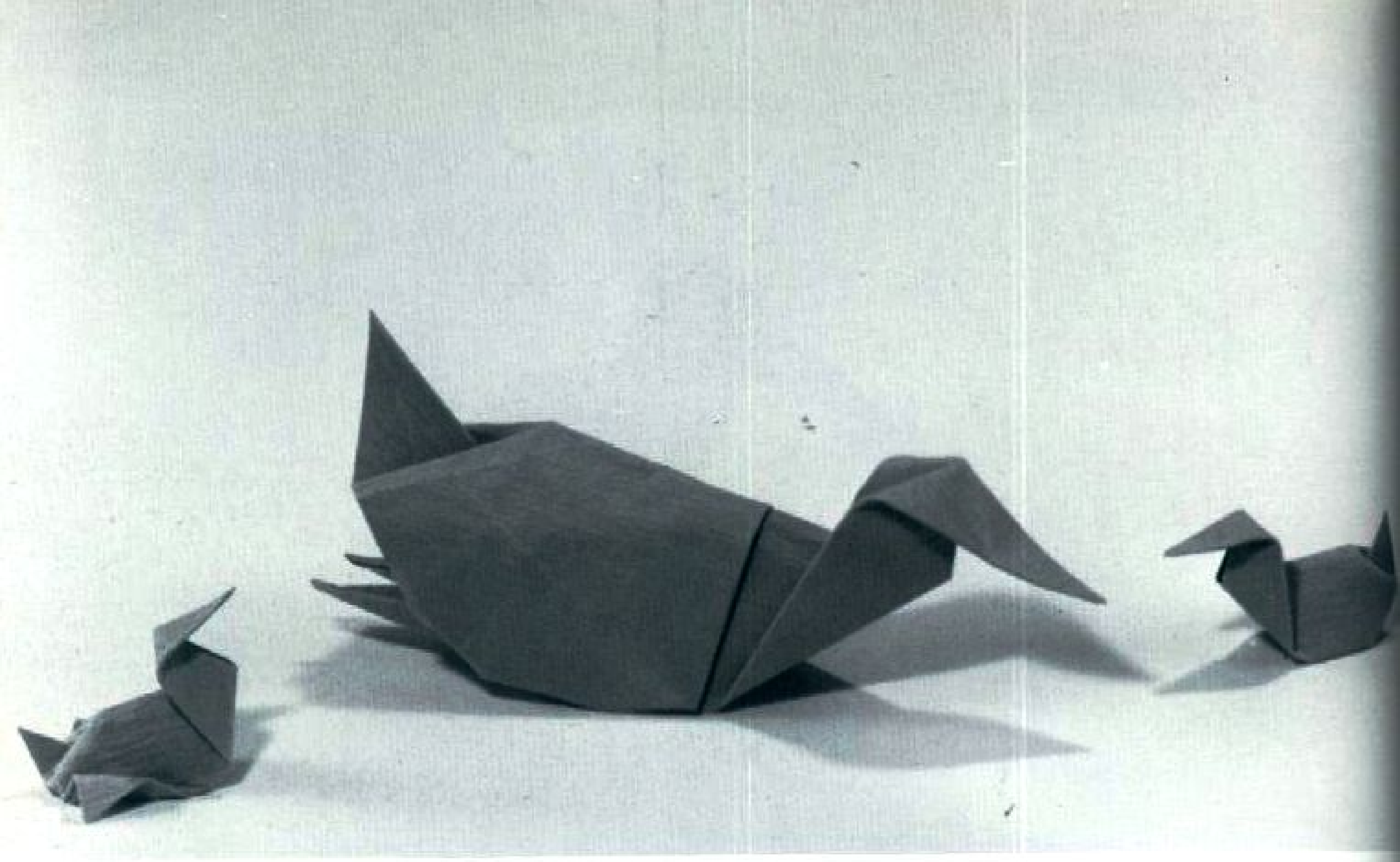
Crows have been close to people through the ages.

Let's fold a mother crow and some babies! The crows which appeared on the preceding page were folded on the basis of their function, balance and motion.

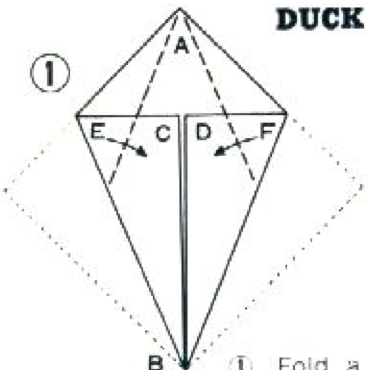
Although baby crows actually have quite large feet, I have made them small. You can learn a lot about the physique and functions of living creatures by comparing these baby crows with their parent as you add the wings and tail feathers.

Both mother and baby in [A] are folded simply. You can arrange them to look as though the baby is begging for food. In [B], I tried for a more realistic look by making the head round. This technique of accenting the head area will make not only birds, but all other animals as well come to life.

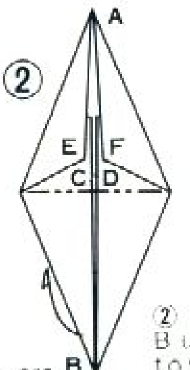
You can choose black, blue or charcoal gray paper. The size of paper for the baby crow is one-fourth the size of that for the mother.



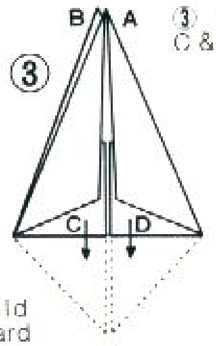
DUCK



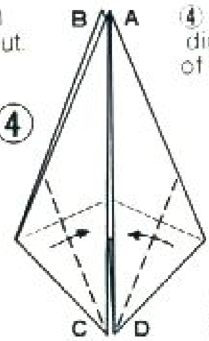
① Fold a square piece of paper as in ①. Fold E & F inward.



② Fold B upward toward the back.



③ Pull C & D out.

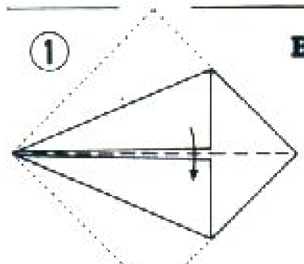


④ Fold in direction of arrows

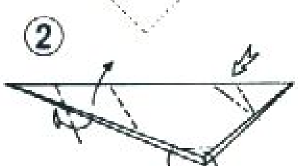


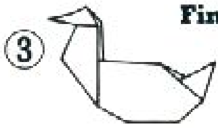
⑤ Fold B down.

BABY DUCK

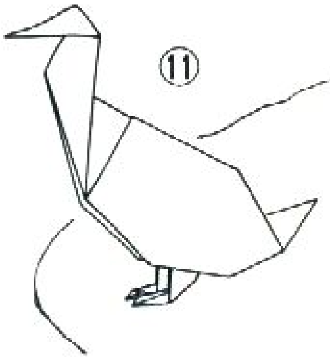


① Use a smaller piece of square paper. Fold as in diagrams ① & ②. Follow same steps as for the parent duck.

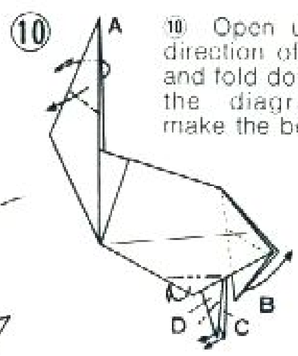




Finish

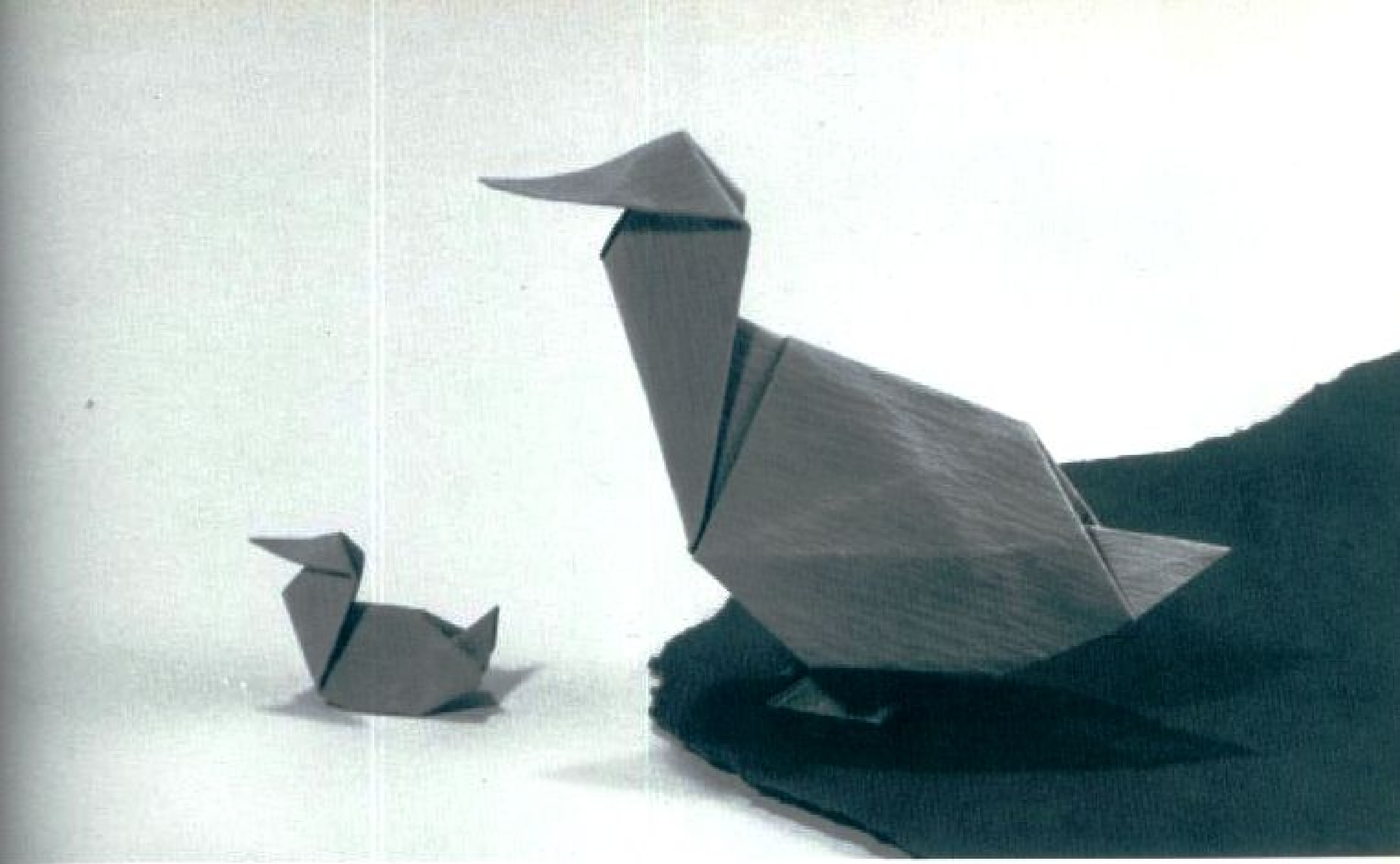


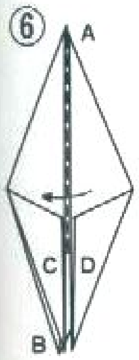
Finish



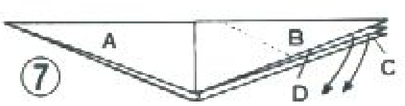
⑩ Open up A in direction of arrows and fold down as in the diagram to make the beak.

Bring B upward to make the tail. Fold C & D to make the feet. Shape it well as a whole.

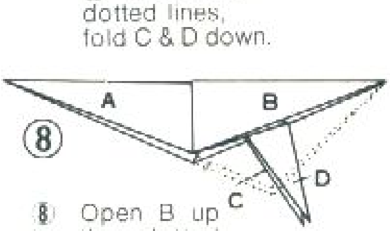




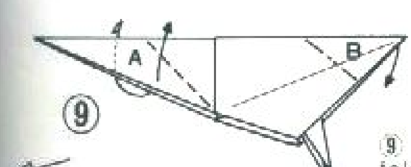
⑥ Fold into half as shown.



⑦ Within the dotted lines, fold C & D down.



⑧ Open B up to the dotted lines.



⑨ Open A and fold it upward. Fold B down between sheets.

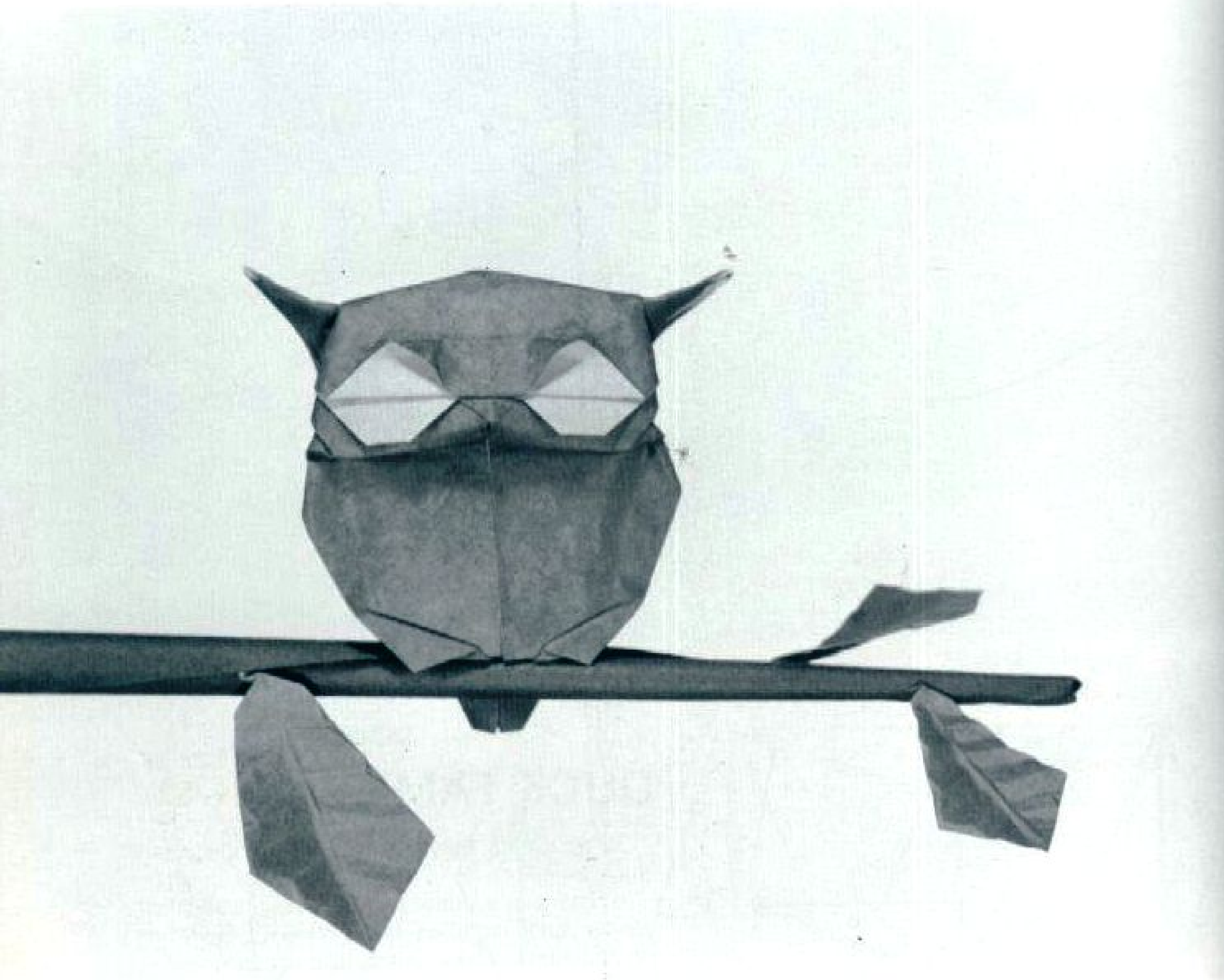
DUCK FAMILY

We'll now fold Mother Duck and her ducklings.

There is something humorous about the way a duck waddles when it walks. By lifting up the beak, you can capture an innocent expression and folding the feet to the back will make it appear as though the duck is swimming.

When you make the feet, as shown in diagram ⑦, I advise you to fold CD together with the paper in the middle, which will enable you to arrange the feet at any angle and length you desire.

The ducklings can be made from paper which is one-quarter the size of that used to make the mother.

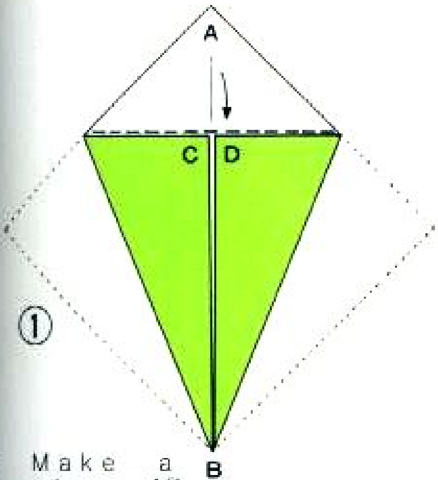


OWL

The wise old owl is a familiar figure. The one shown here is folded in relief form and the face is purposely deformed to bring out the characteristics of the owl.

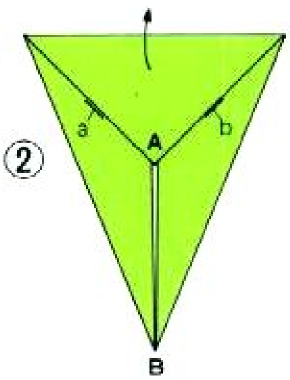
You can use any kind of paper but try to choose an appropriate color for an owl. You can use either the same color for both sides or contrasting colors. Two sheets of different colored paper may also be selected. Effective use of color will make the owl very lifelike.

You may like to perch your owl on a branch with leaves made from heavy paper or one with fancy paper.

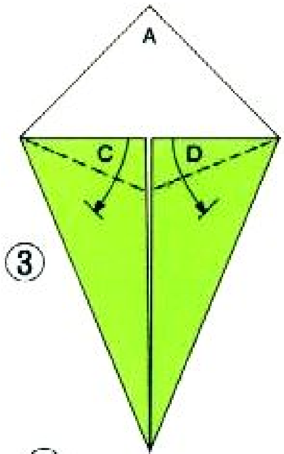


① Make a diagonal crease AB on a piece of square paper. Fold C & D toward the center and fold A downward.

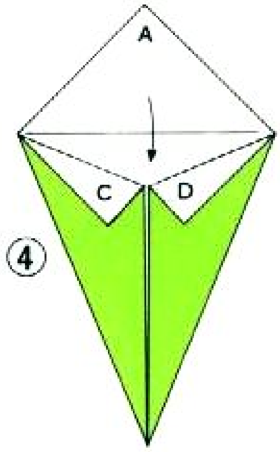
② Mark a and b with your finger-nail. Open up A.

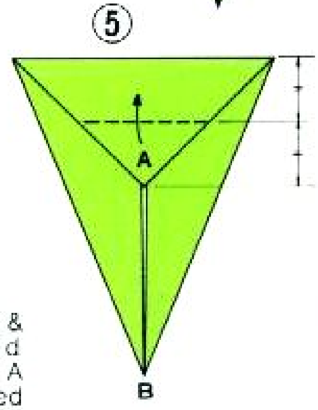


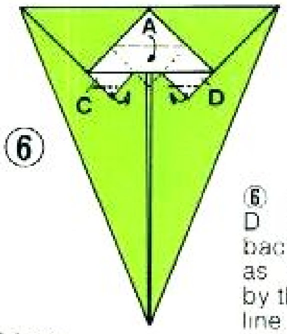
③ Fold C & D as shown.



④ Fold A downward.

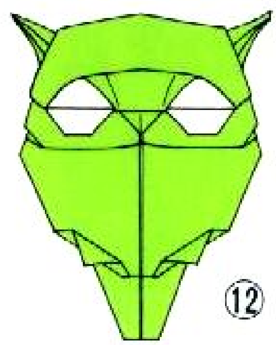


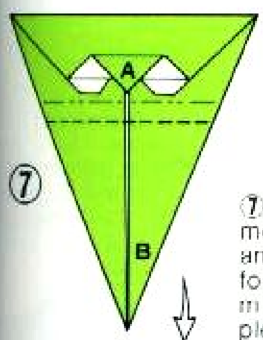




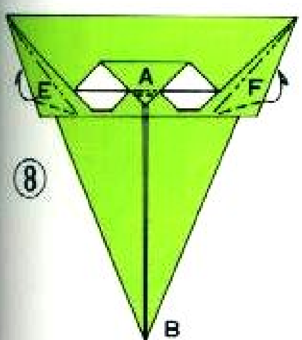
⑥ Fold C & D toward back. Fold A as indicated by the dotted line.

Finish



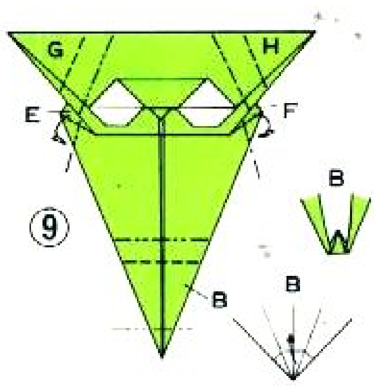


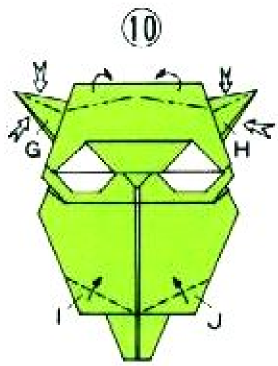
⑦ Fold on mountain and valley folds to make a pleat.



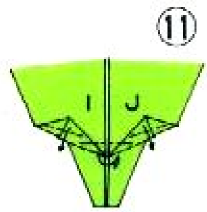
⑧ Make a small pleat on A as shown. Fold F & F along mountain and valley folds in order to make ⑨.

⑨ Fold E & F backward. Make a pleat on G & H. Fold B as shown in the diagram.

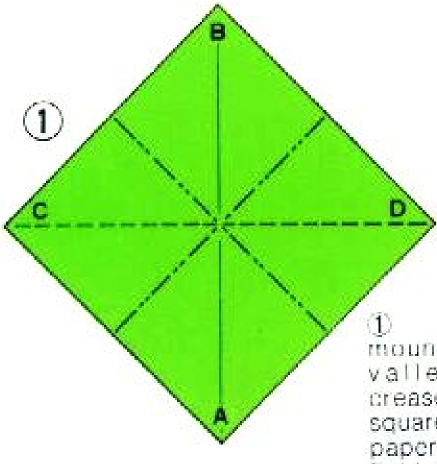




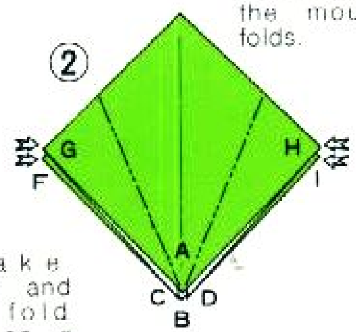
⑩ Pinch G & H and make folds. Fold the top of the head backward to make it round. Fold I & J upward.



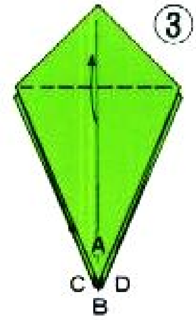
⑪ Fold I & J down a bit as shown. Fold the central point toward the inside.

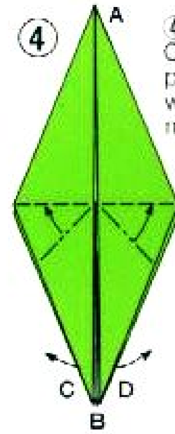


① Make mountain and valley fold creases on a square piece of paper as shown. Fold as in ②.

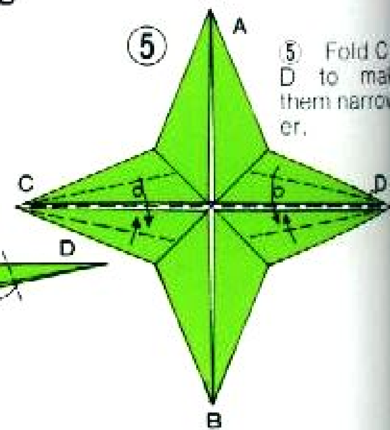


② Fold F, G, H and I inward on the mountain folds.

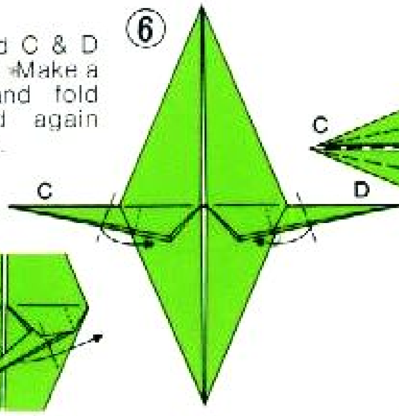




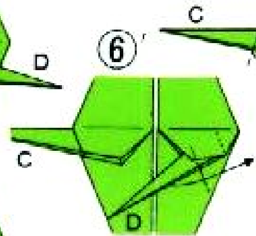
④ Open up C & D by pulling up- ward to make ⑤.

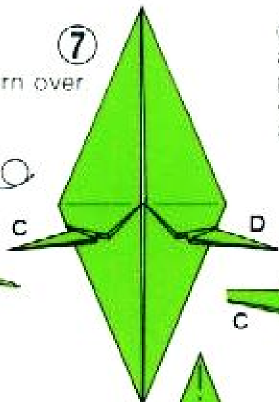


⑤ Fold C & D to make them narrow- er.

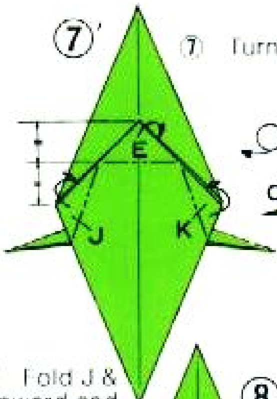


⑥ Fold C & D as in ⑥' Make a pleat and fold outward again as in ⑦.

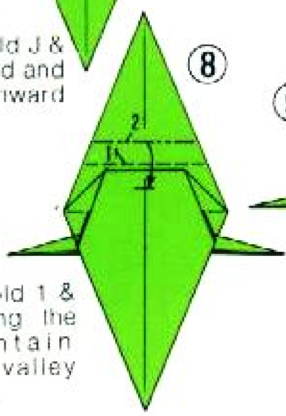




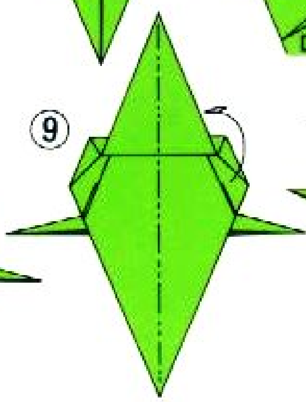
⑦ Turn over.



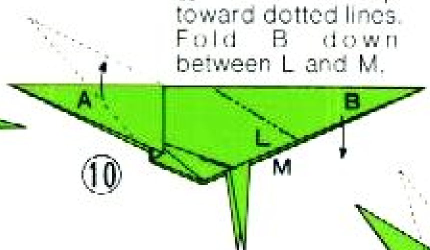
⑦' Fold J & K inward and fold E inward too.



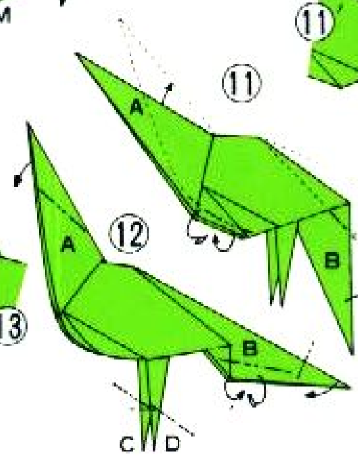
⑧ Fold 1 & 2 along the mountain and valley folds.

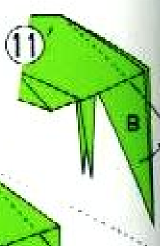


⑩ Lift A up toward dotted lines. Fold B down between L and M.



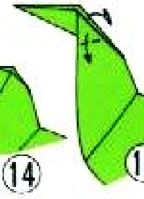
⑪ Fold B up again toward dotted lines and refold the tail on the mountain fold. Try to round off the breast line by pulling A upward to position indicated by the dotted line.





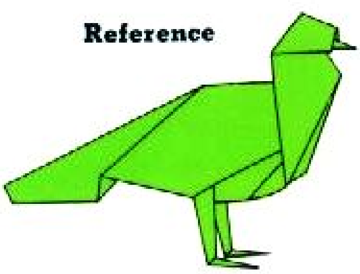




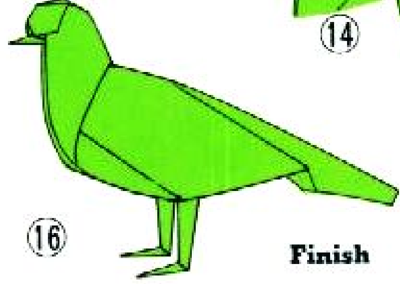


⑫ Fold B on the mountain fold. Fold C & D following "Folding the feet." Make the head by folding A following steps ⑬, ⑭ and ⑮.

Reference

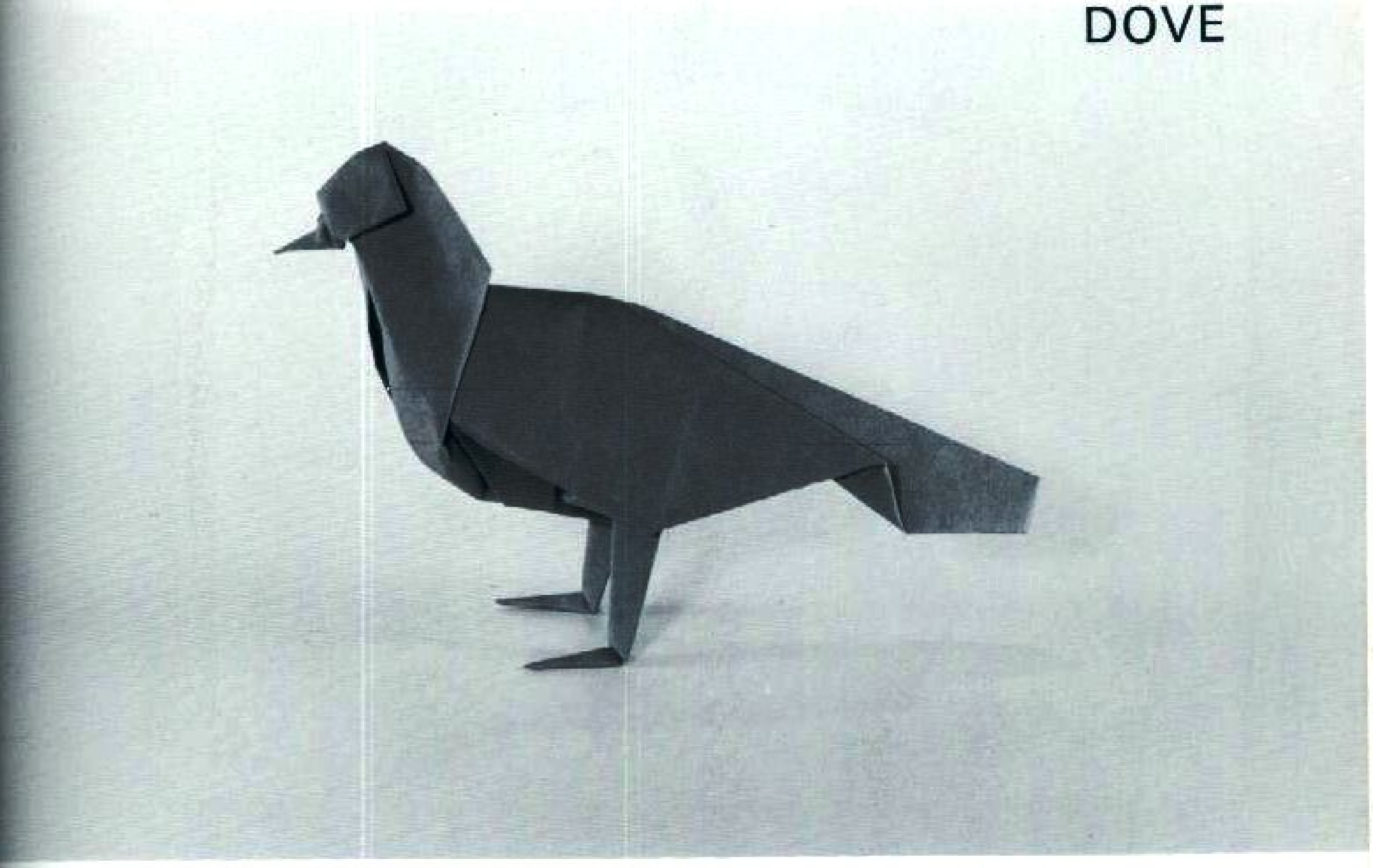


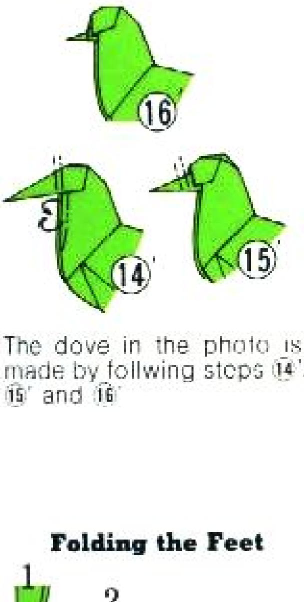
Simplified folds for the breast and head.



Finish

DOVE





The dove in the photo is made by follwing steps ⑭', ⑮' and ⑯'

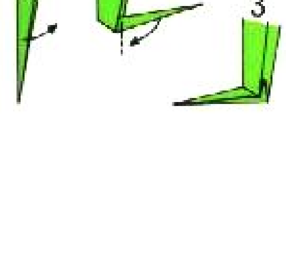
The dove is the symbol of peace and is widely loved.

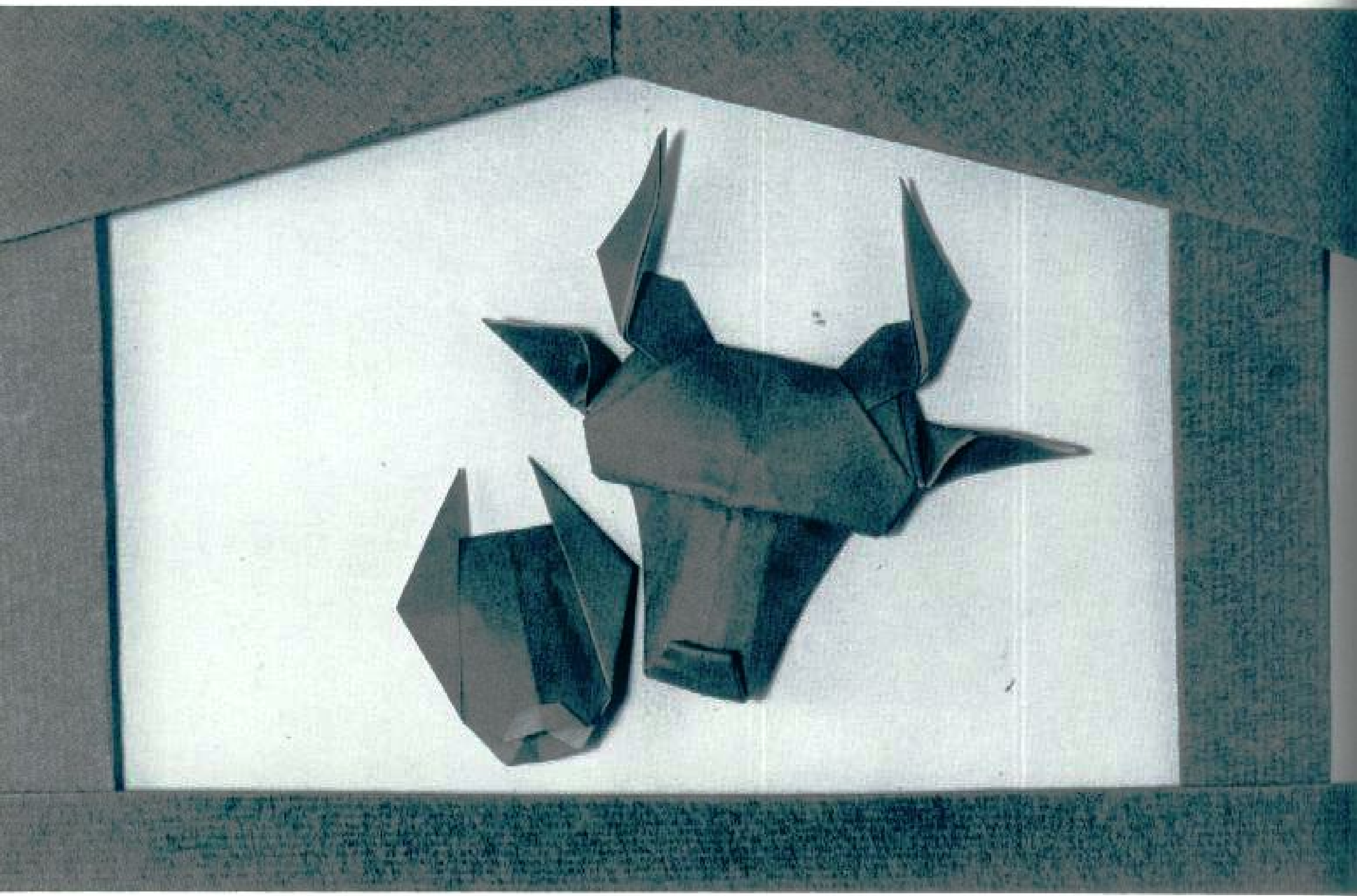
Before making this design, I visited a nearby park to watch the doves. There was always a conspicuous, strong looking boss leading the group. There are many kinds of doves such as the carrier pigeon and the turtle dove which are easy to identify whereas some others may belong to the same species but have distinct body lines.

You can make the different kinds by altering the angles and folding lines as shown here.

Try making doves in different postures, as if they are flying or eating.

Folding the Feet





COW

We have known the domesticated cow from ancient times.

The folding methods in diagrams ⑨ and ⑩ can be varied by making adjustments in the length and angle from the inside.

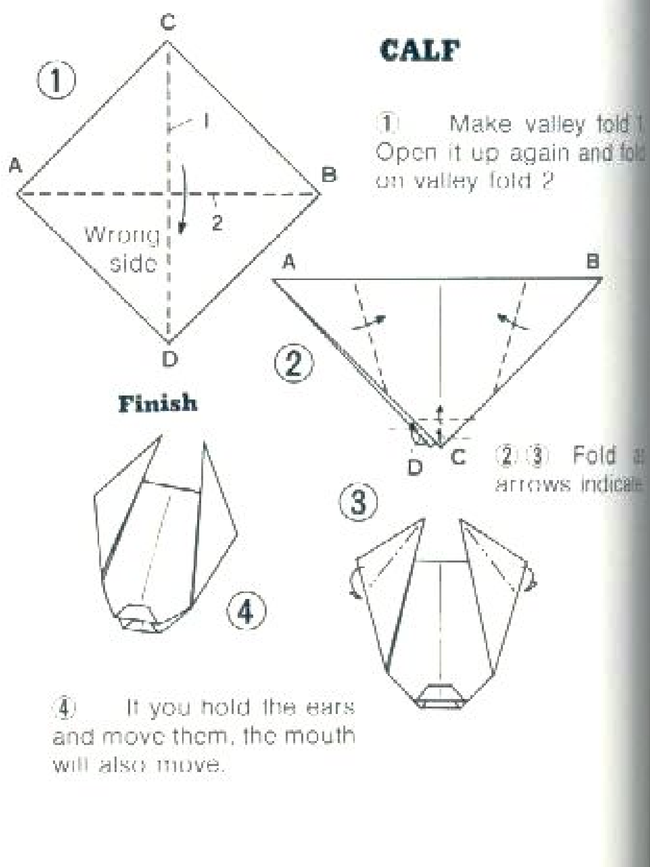
Here, the folding is done to capture the characteristics of the cow by presenting only its head. Using photographs for reference, you should be able to fold other types such as the water buffalo, the American steer or Japanese cows.

Choose your paper to match the color of the cow. The size for the calf should be one-third that required for the cow.

CALF

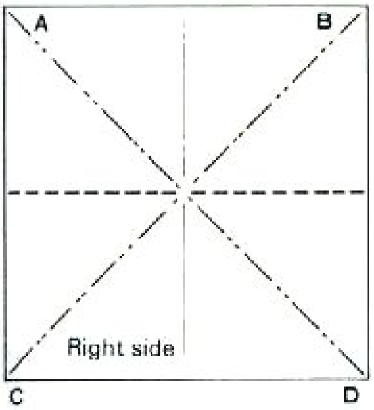
① Make valley fold 1. Open it up again and fold on valley fold 2.

②③ Fold as arrows indicate.

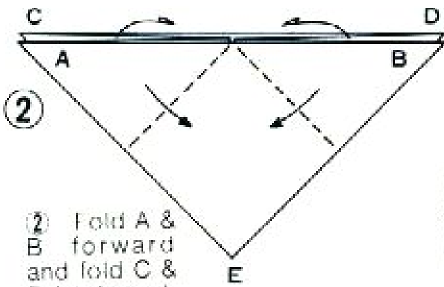


④ If you hold the ears and move them, the mouth will also move.

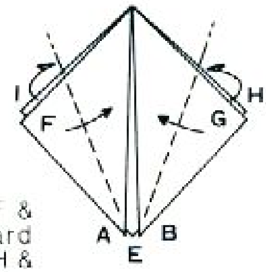
COW



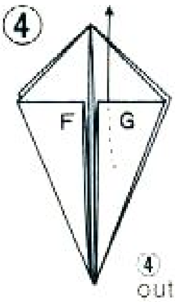
① Mark mountain and valley folds on a piece of square paper as shown. Fold it to make ②.



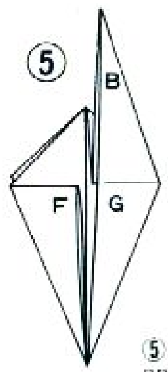
② Fold A & B forward and fold C & D backward.



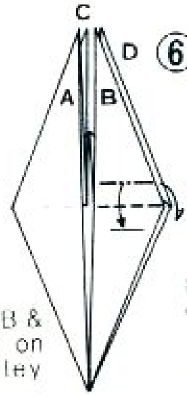
③ Fold F & G forward and fold H & I backward.



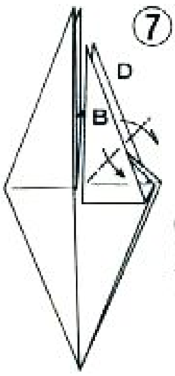
④ Pull B out of the back of G.



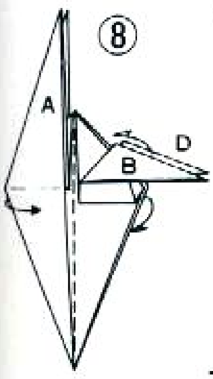
⑤ Pull A, C and D out in the same way as B.



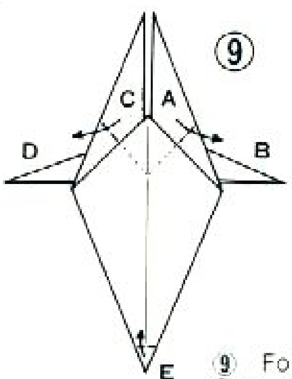
⑥ Fold B on the valley fold and then on the mountain fold. Fold D the same as B.



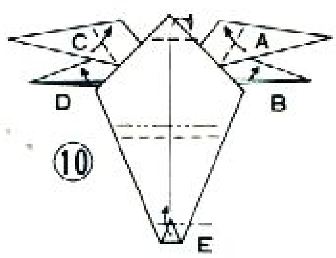
⑦ Fold B & D down on the valley folds.



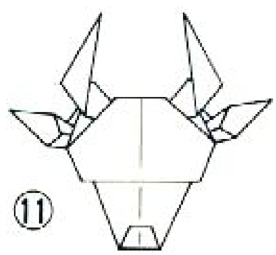
⑧ Turn A over B and D over C to make ⑨.



⑨ Fold A & C as arrows indicate.

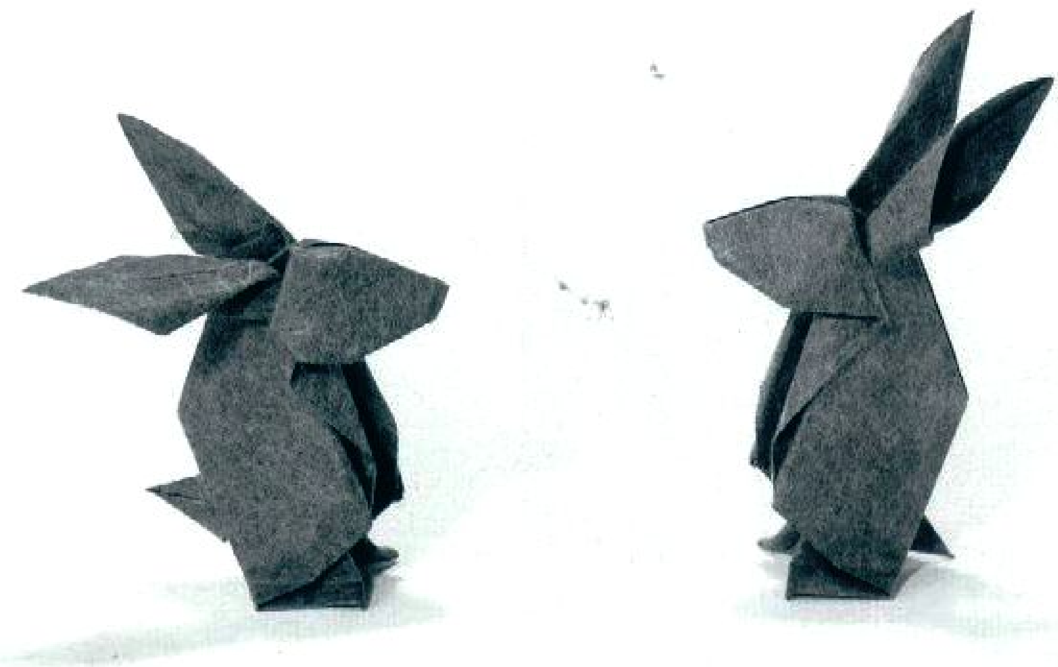


⑩ Make a pleat at eye level. Fold E to make the nose. Fold A & C as shown to make the horns. Open up B & D to make the ears.
Finally fold the top of the head backward and arrange the face as a whole.



⑪

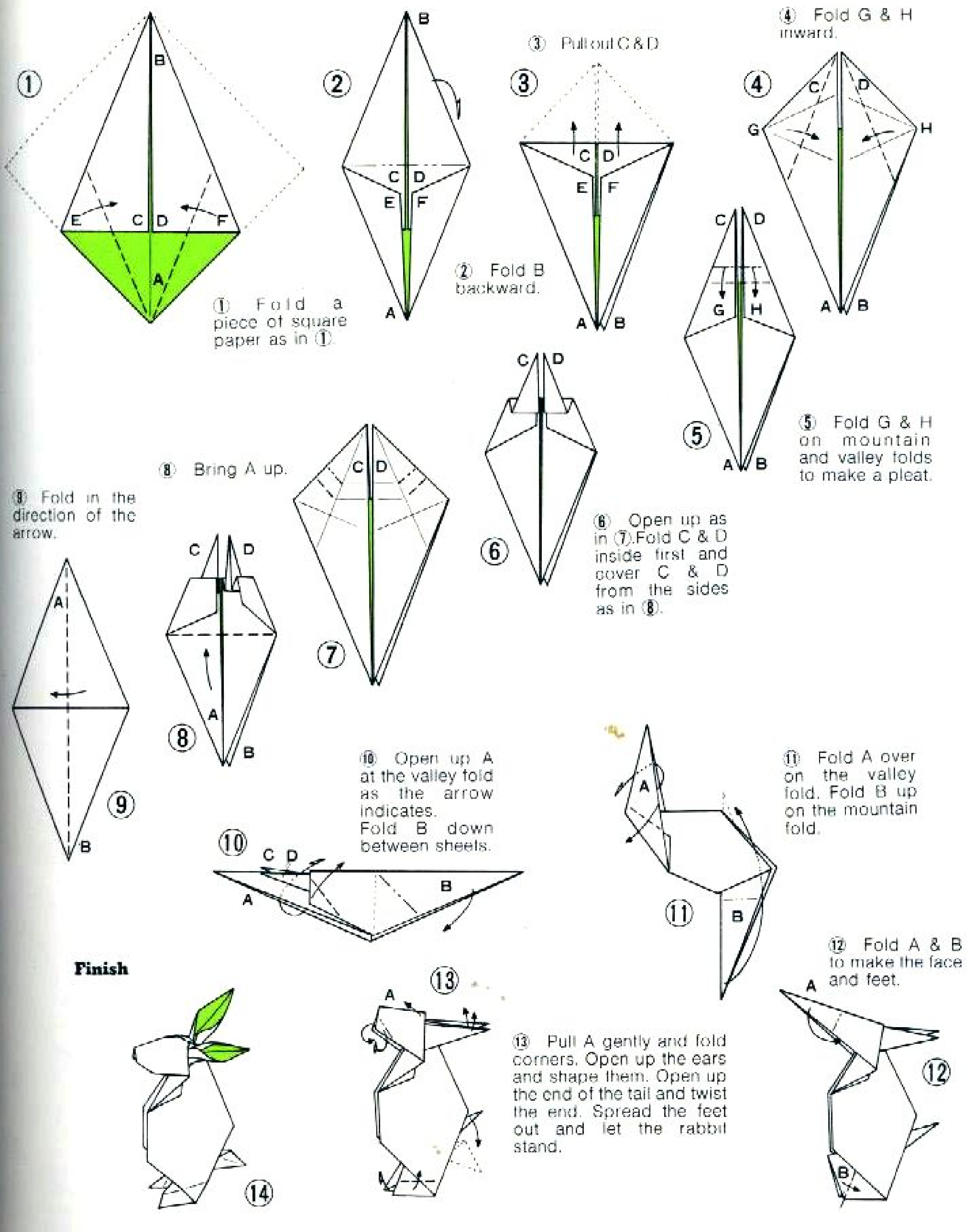
Finish

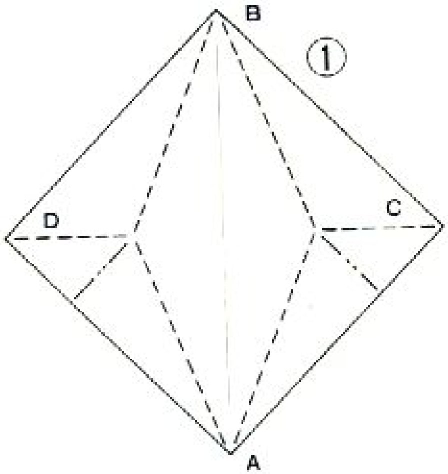


RABBIT

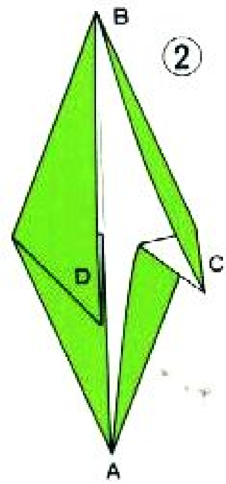
The rabbit is one of the cutest animals. It appears in many legends and fairy tales and it was from such a story that I got the idea to make this rabbit, standing erect with its ears pointing upwards.

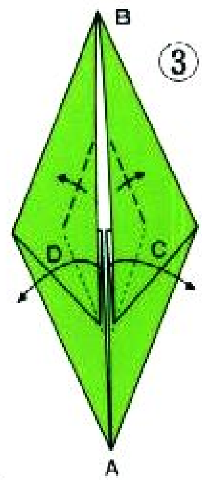
The fur of some wild rabbits becomes white in the winter. Here, I used a piece of pink paper with a white back. The white side was used to make the body and the pink appears as the inside of the rabbit's ears as illustrated in diagram ⑬. If you skip the steps from ⑤ to ⑧, leaving C and D as it is, you will come up with a rabbit with bigger ears.


① Fold a piece of square paper as in ①.
② Fold B backward.
③ Pull out C & D.
④ Fold G & H inward.
⑤ Fold G & H on mountain and valley folds to make a pleat.
⑥ Open up as in ⑦. Fold C & D inside first and cover C & D from the sides as in ⑧.
⑧ Bring A up.
⑨ Fold in the direction of the arrow.
⑩ Open up A at the valley fold as the arrow indicates. Fold B down between sheets.
⑪ Fold A over on the valley fold. Fold B up on the mountain fold.
⑫ Fold A & B to make the face and feet.
⑬ Pull A gently and fold corners. Open up the ears and shape them. Open up the end of the tail and twist the end. Spread the feet out and let the rabbit stand.
Finish

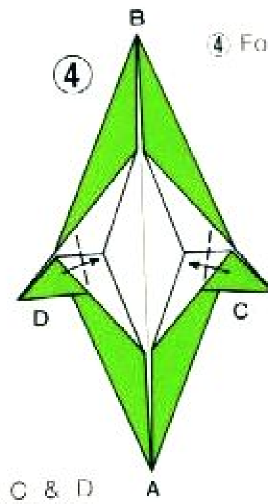


① Make a diagonal crease AB on a square piece of paper. Make valley folds along the diagonal crease. Fold C & D as in ②.

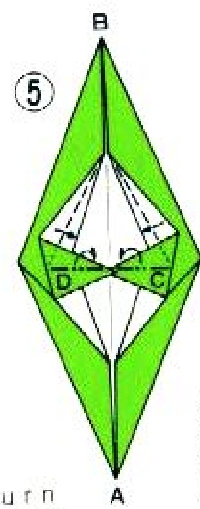




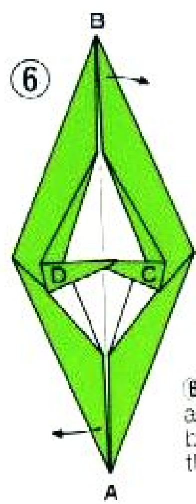
③ Pinch C & D. Open up C & D by twisting them a bit.



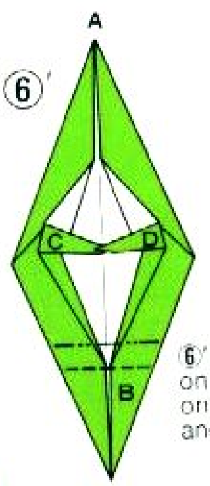
④ Fold C & D.



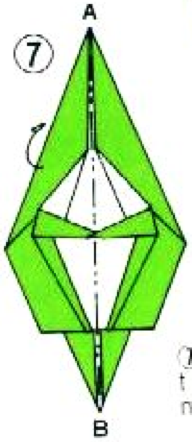
⑤ Fold C & D on mountain and valley folds to make them narrower.



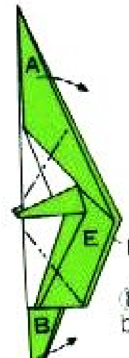
⑥ Turn around and bring A to the top



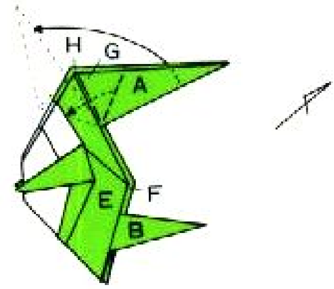
⑥' Make a pleat on B by folding on the mountain and valley folds.



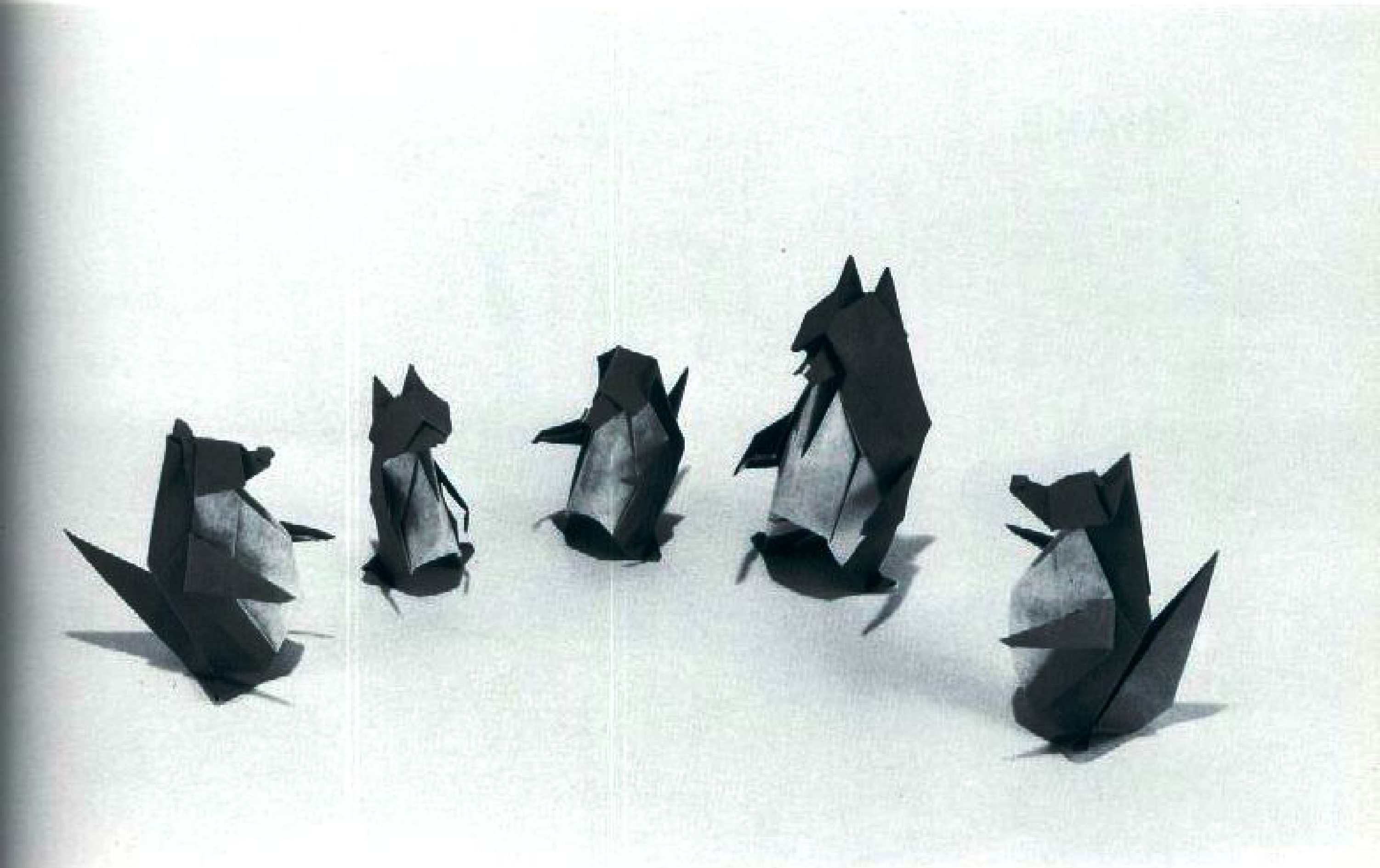
⑦ Fold back on the center mountain fold



⑧ Fold both A & B between E & F.



⑨ Pinch A and fold it between G & H on the mountain and valley folds to make ⑩.

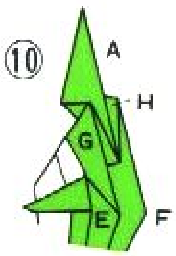


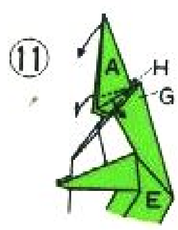
RACCOON, The Drummer

Let' s fold the raccoon, which is so well known from Japanese fairy tales and old folk songs.

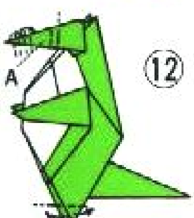
Take a piece of brown paper which is white on the back. It should be folded so that the white side appears on the stomach and chest. Pushing the tail upwards will give it the posture of the raccoon shown on the right.

After folding it, you can hold the figure by the neck and insert your finger from the back, pushing to make the stomach more rotund. By pulling A from the inside of diagram ⑫, you can make the face rounder and this will make it look even more like a raccoon.





⑪ Open A in direction of arrows and bring down.



⑫ Flatten A. Make a pleat at the eye level. Roll folds to make the nose. Fold I & J outward to make the feet. Shape the belly to look round.

Finish



SNAKE



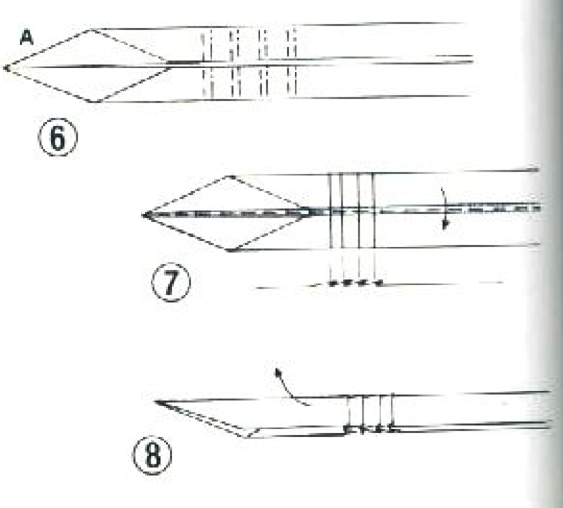
There are not many people who like snakes. I tried to make these snakes more lovable by adopting the familiar, simple form of local toys.

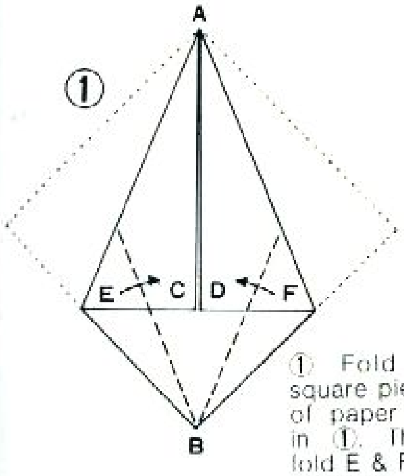
Mercury, the Roman god of commerce and science, carries a caduceus, a staff entwined with two snakes and in Japan, snakes are also painted on votive tablets for good luck in business.

I usually choose a color that matches the animal or object I am making. However, in the case of these snakes, I deliberately chose a different color in order to give them a feeling of being toys.

In the upper photograph, I folded the part between the head and the abdomen into two and gently pulled the neck up and wound the section from the abdomen to the tail around my finger. (See reference.)

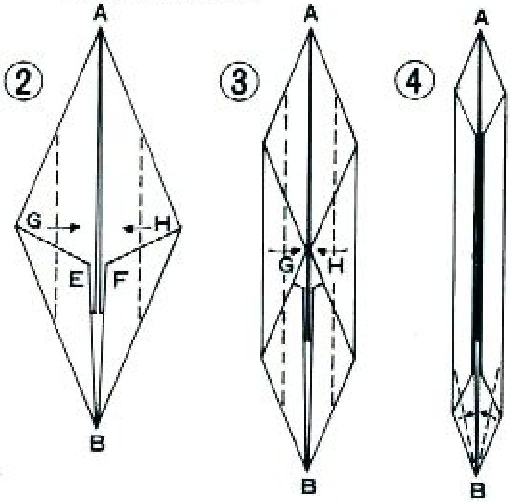
Reference





① Fold a square piece of paper as in ①. Then fold E & F in direction of arrows.

Fold following steps ② and ③.

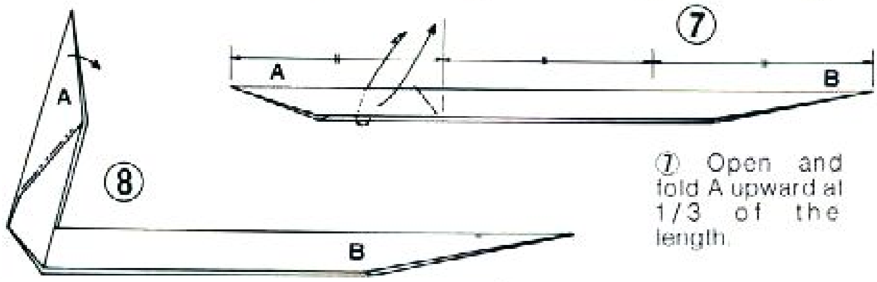


④⑤ Fold B on valley lines. Then slide the part inward as arrows indicate to make ⑥.

⑥ Fold at the center to make a long narrow body.

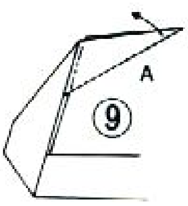




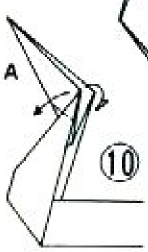


⑦ Open and fold A upward at 1/3 of the length.

⑧ Fold A between sheets.

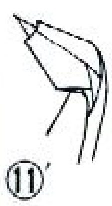


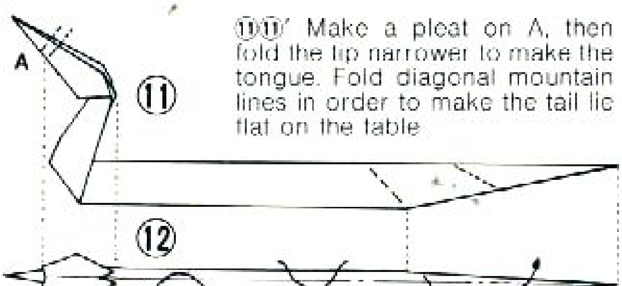
⑨ Fold A on the mountain fold.



⑩ Fold over along the valley folds.

⑪⑪′ Make a pleat on A, then fold the tip narrower to make the tongue. Fold diagonal mountain lines in order to make the tail lie flat on the table.

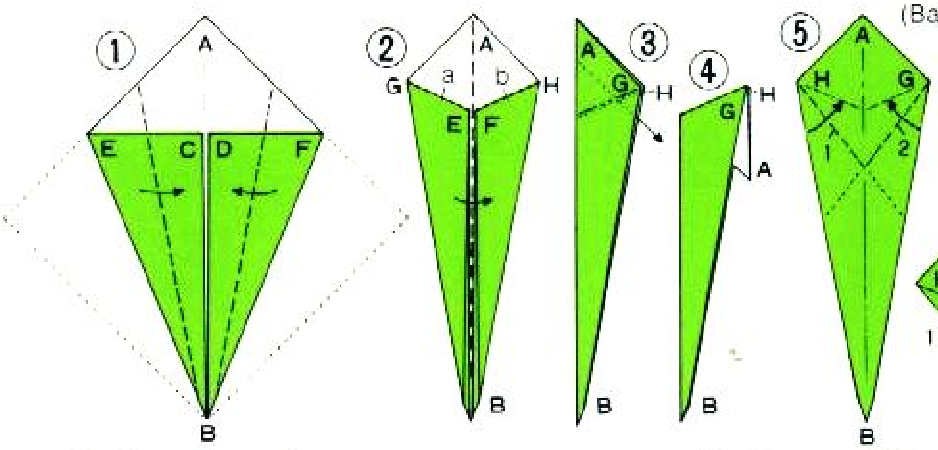




⑫ You can curve the tail as you wish to make your snake look more alive.

⑬ **Finish**



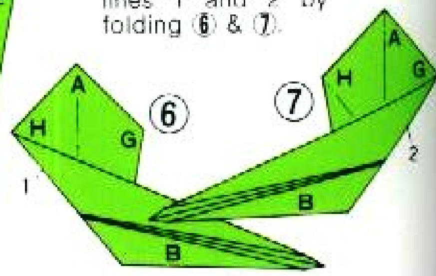


① Mark diagonal line AB. Fold C & D first and then fold E & F.

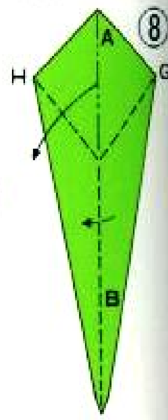
③ Fold A along lines a & b.

④ Open up ④ to make ⑤.

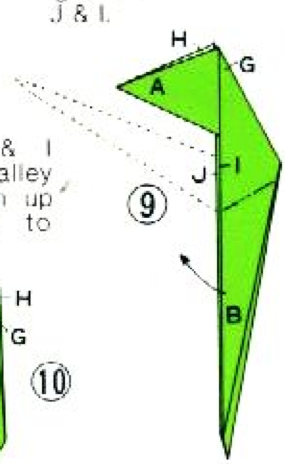
⑤ Make valley lines 1 and 2 by folding ⑥ & ⑦.



⑧ Fold on mountain and valley folds.

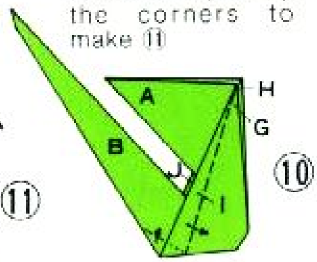


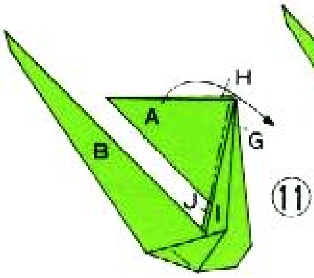
⑨ Fold B between J & I.



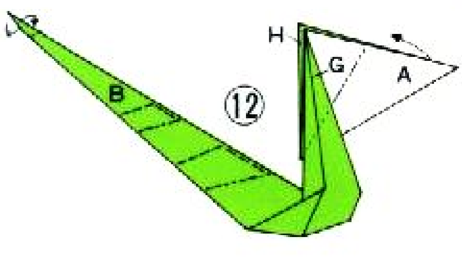
⑪ Push A between G & H in the direction of the arrow.

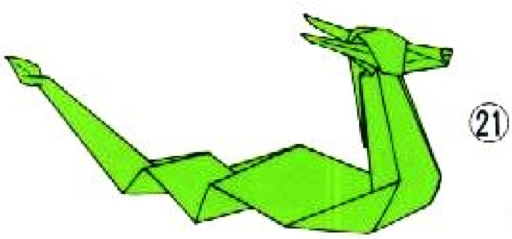
⑩ Fold J & I along the valley fold and open up the corners to make ⑪.



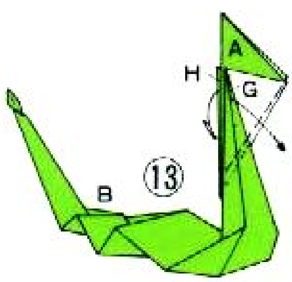


⑫ Push A upward on the mountain fold. Open up the body and fold as shown.

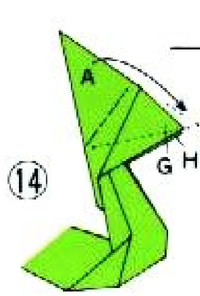




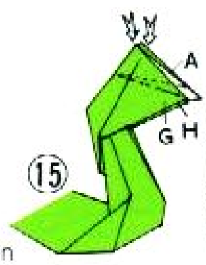
Finish



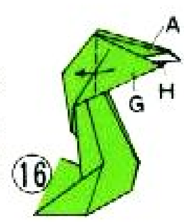
⑬ Bring G & H over the part of the head to make ⑭.



⑭ Fold A between the sheets.

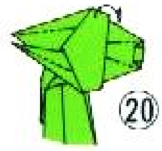


⑮ Fold the pointed head in as the arrows indicate to make ⑯.



⑯ Fold G in the direction of the arrow. Turn over and fold H the same as G.

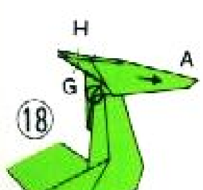




20 Fold down as the arrow indicates. Shape the nose and make the horns sharper.



19 Make the fore-head and nose by folding the valley and mountain folds.



18 Hold ◯ with your finger and pull A out gently. Flatten the head.



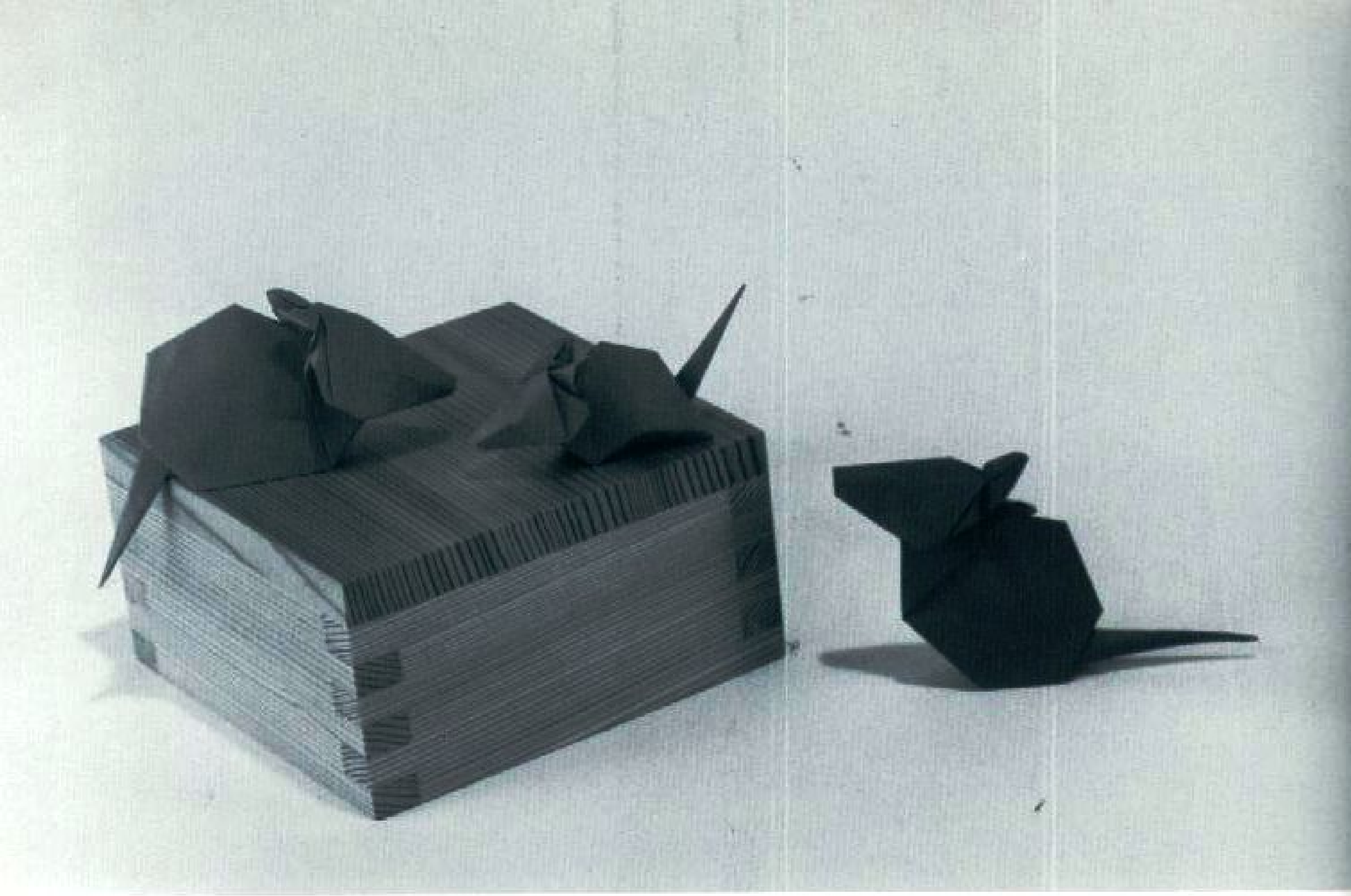
17 Fold down as arrows indicate.

DRAGON

Among the twelve animals in the Japanese zodiac, only the dragon is a fictional one. However, unlike many of the popular monsters of the present day, it is a refined creature.

In Japan, sculptured dragons are frequently seen in the decorations of shrines. They appear in folk tales as the god of the sea or the dragon god. It is also said that dragons can summon the rain clouds and therefore, they are believed to be the guardian deity of wooden buildings.

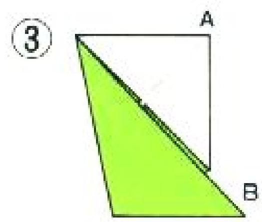
In folding this animal, it is important to clearly define the horns and mane. Try to give it an appearance of dignity by adjusting the angle between the face and the neck.



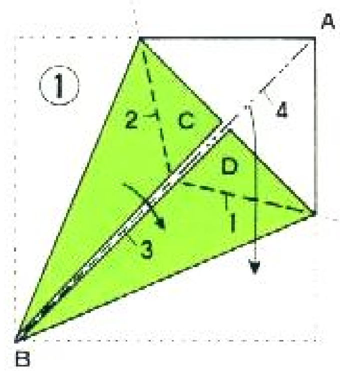
MOUSE

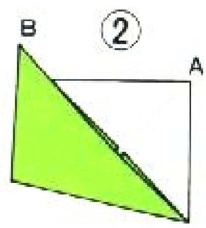
It is very easy to become enthusiastic about origami because it is so simple to do. I would like to state the importance of origami from the point of view of the formative arts.

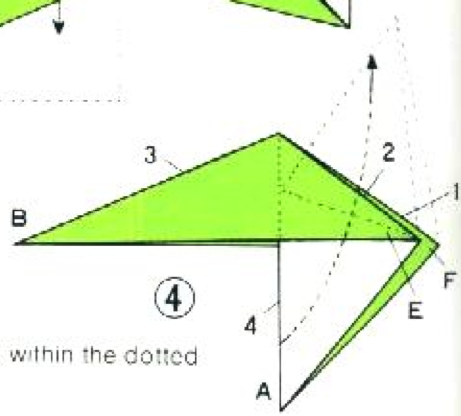
When we think about origami for children, there are two kinds ; origami that adults fold and give to children and the kind that they can fold themselves by following diagrams. The ideal size of paper in either case should be 12 cm × 12 cm (7 in × 7 in). If the paper is larger than this, it becomes difficult to handle. When you teach children to fold origami, you should sit next to them so that they can see your hands instead of sitting in front of them. Generally speaking, however a 15 cm × 15 cm square sheet of paper is recommended. It should be about the same thickness as piece of stationery. When you have learned to fold an object with a small piece of paper, it is quite easy to do the same with a larger sheet.



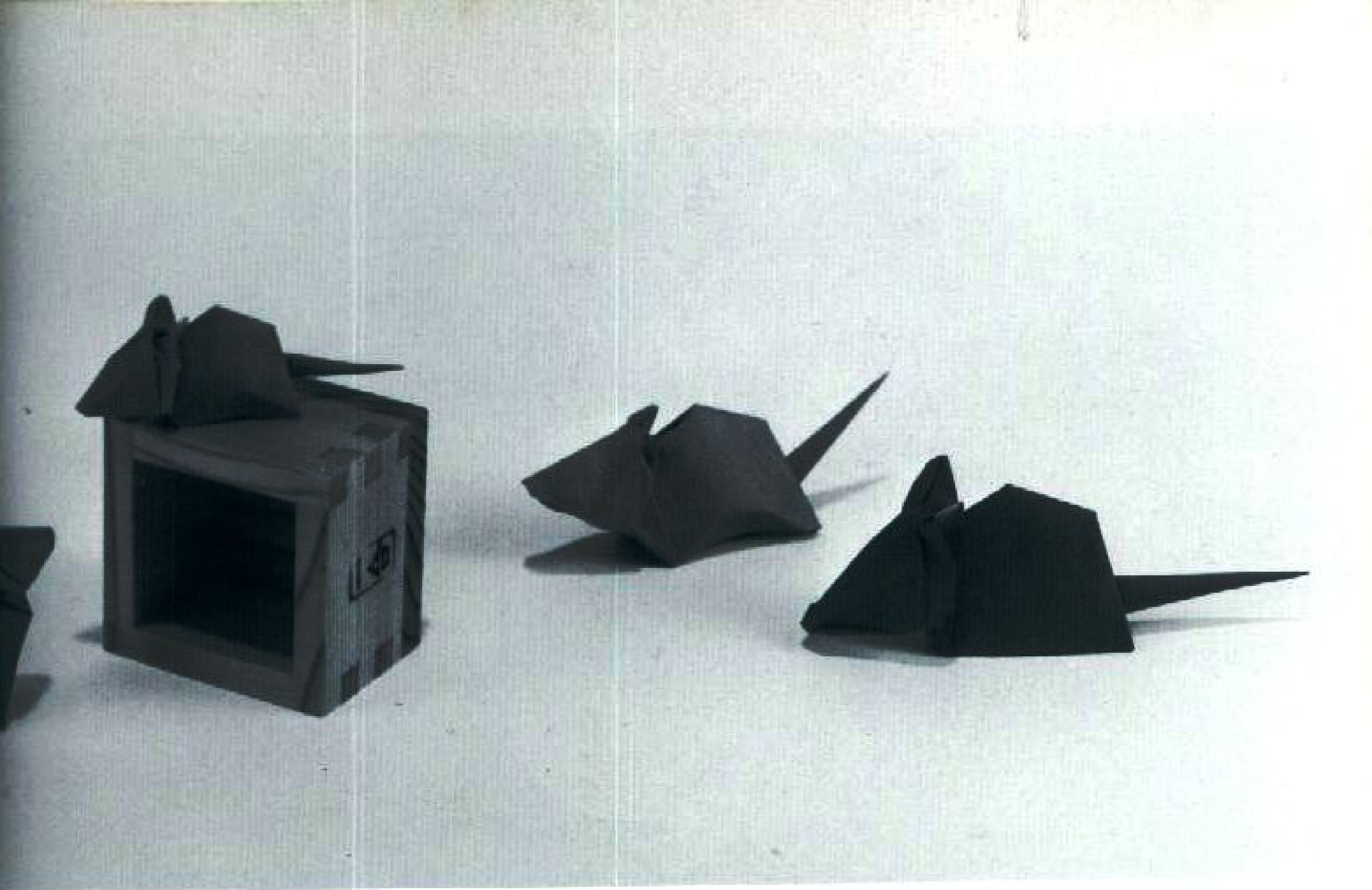
① Fold a square piece of paper as in ①. In order to make dotted lines, you fold the paper as shown in diagrams ② & ③. Fold valley fold 3 and mountain fold 4 to make ④.

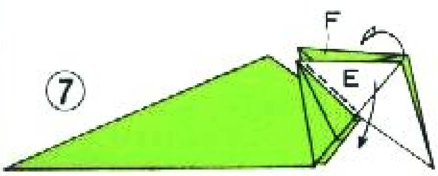




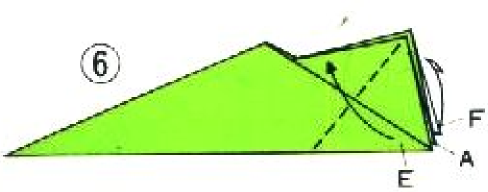


④ Fold A up within the dotted lines.

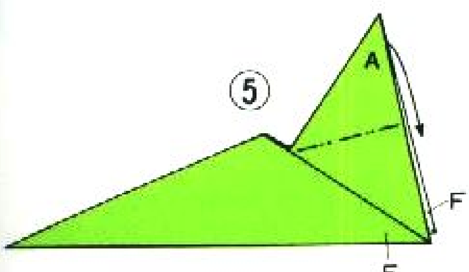




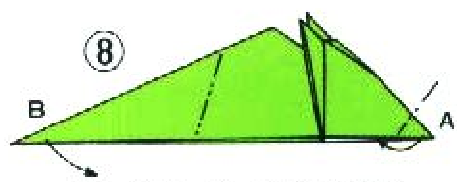
⑦ Open up E & F and fold over both sides to make the face.



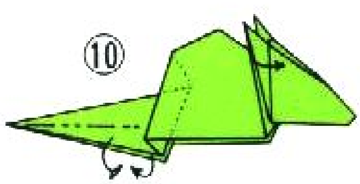
⑥ Fold E upward on the valley fold. Fold F same as E.



⑤ Bring A down between E & F.

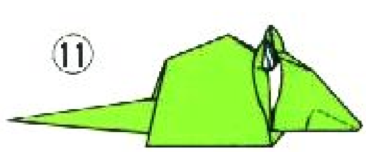


⑧ Fold the tip of A inward. Fold B down on the mountain fold.



⑩ Make the tail narrower and open up the ears. Round the body by putting your finger inside it.

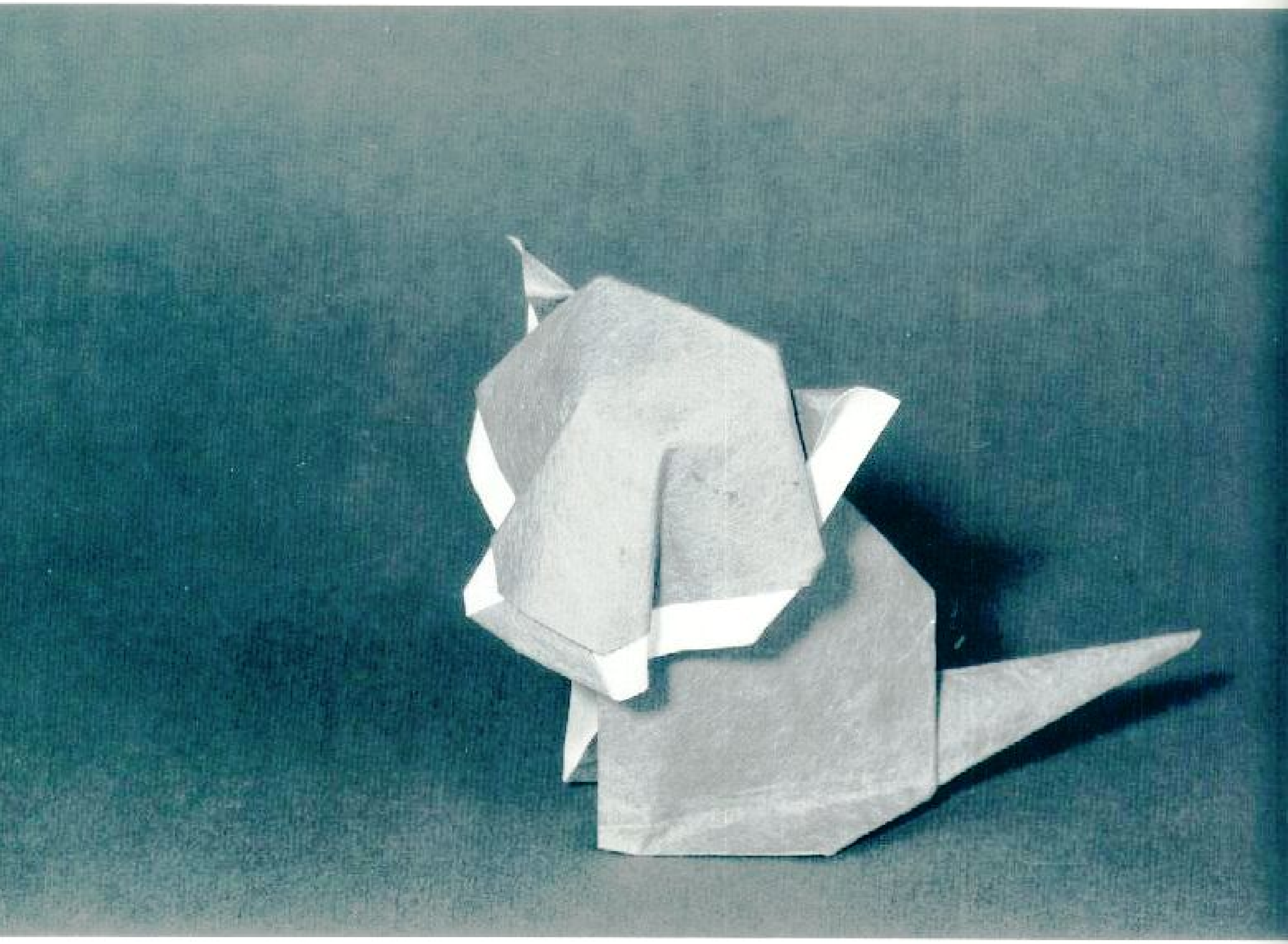
Finish





⑨ Fold the lower part of the face on the mountain folds. Fold B upward to make the tail.

⑪ You can make various kinds of mice by changing the angles of the tails and heads or by the size.



TIGER

The tiger is said to travel back and forth over 1,000 miles and it is symbolic of health and safety.

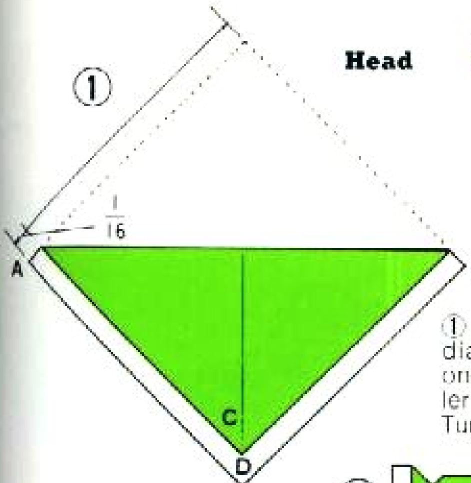
In folding the tiger, I tried to express its power by placing emphasis on its nose and its tail. I used a two-colored sheet of paper (light brown with a white back).

In this diagram, the head and the body are folded separately with the head fixed to the body. If you would like to make the head movable, you should pull A in diagram ⑥ of the body section. Then pull out the part marked ○ in diagram ⑤ of the head section and make a depression there. The head balances on the pointed A of the body section.

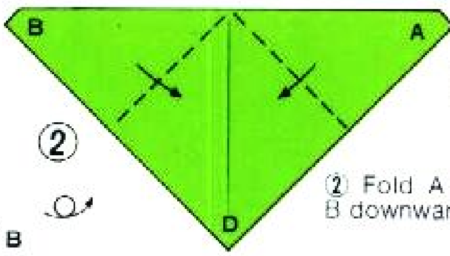
The head 〔I〕 is easy for children to make as it can be folded towards the back, as shown in ⑤.

Using heavy paper, you can make a big parent tiger's head as shown in section 〔II〕 and the baby can be made smaller, as in 〔I〕. They can be placed together to decorate a wall.

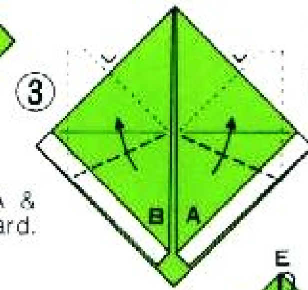
Head



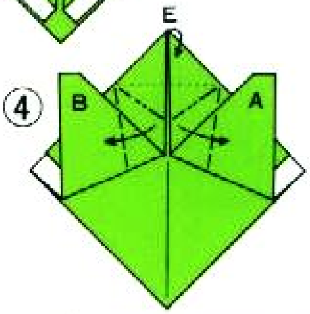
① Fold as in the diagram, making one side 1/16 smaller than the other. Turn over.



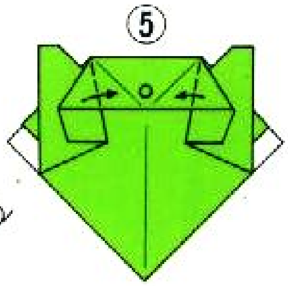
② Fold A & B downward.



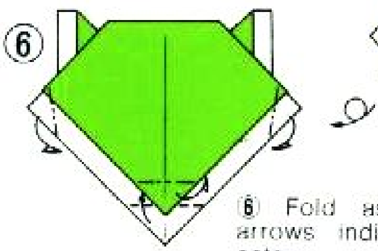
③ Bring A & B upward to the dotted lines.



④ Mark valley and mountain folds as shown. Fold E down on the dotted line, opening up on the mountain and valley folds, to make ⑤.

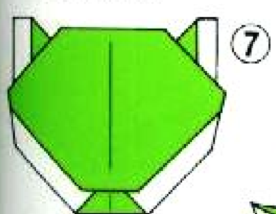


⑤ Bring the parts in direction of arrows. Turn over.



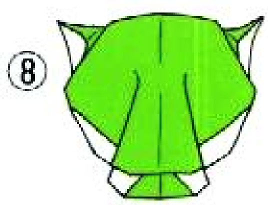
⑥ Fold as arrows indicate.

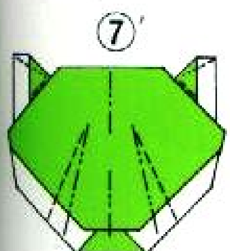
Head [I]



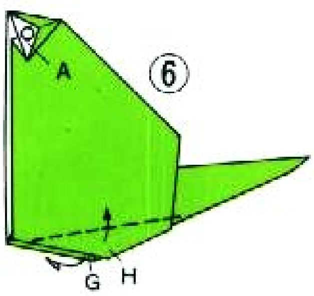
Head [II]

Finish



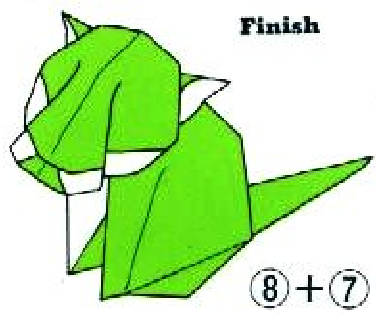


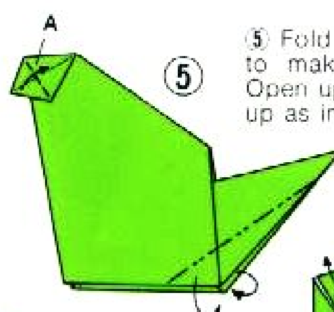
⑦' Follow the steps ① to ⑦. Shape the muzzle and ears with fingers.



⑥ Bring G & H up on the valley folds to make the feet. Affix ◯ of the head shown in ⑤ to ◯ of the body.

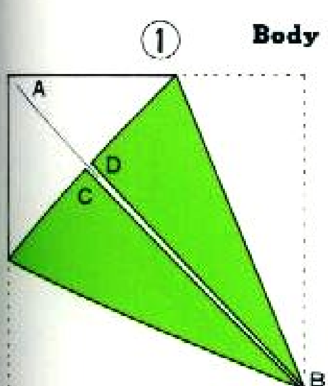
Finish



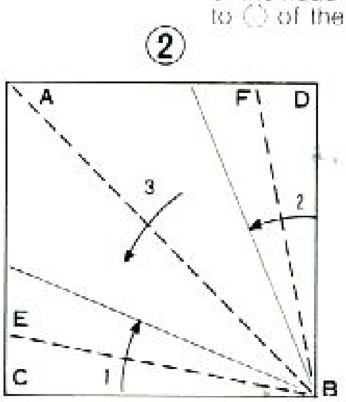


⑤ Fold the tail inward to make it narrower. Open up A and fold it up as in the diagram.

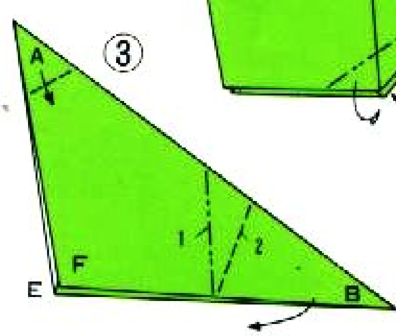
Body

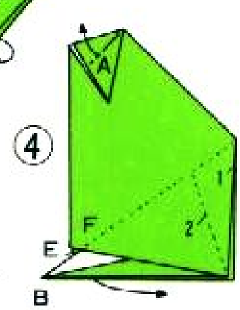


① Fold a square piece of paper as in ① and open it up.



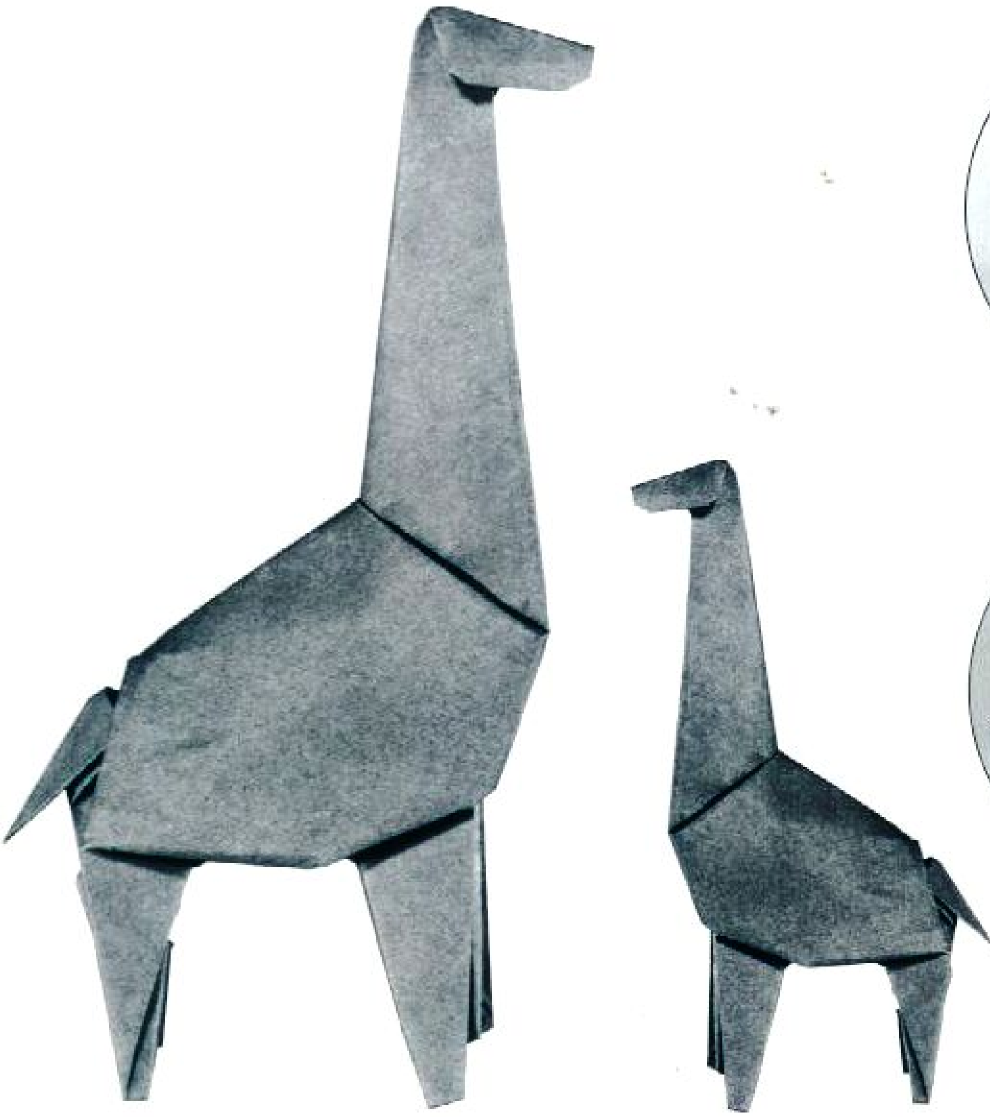
② Fold according to 1, 2 and 3.





③④ Fold A as the arrow indicates. Fold B in between E & F on mountain fold 1, then bring it back up to valley fold 2.

GIRAFFE



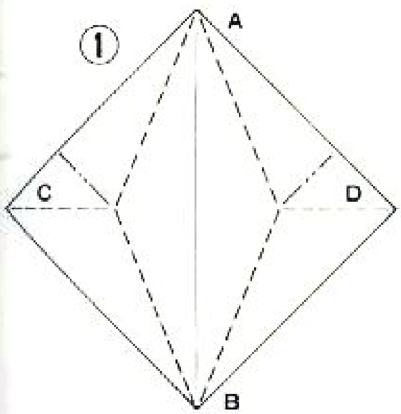


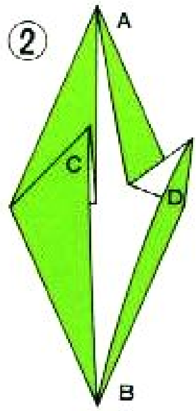


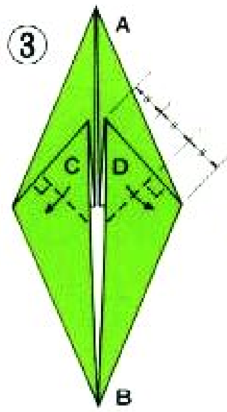
Let us now fold a long-necked giraffe.

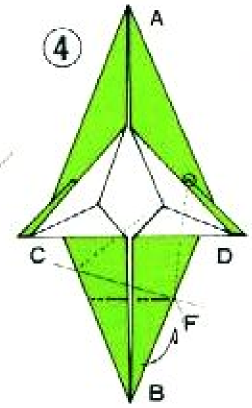
Just as you should make many sketches of animals you plan to paint or carve, it is important to do the same when folding origami because you then become familiar with their physique and posture. The study of healthy animals, to acquaint oneself with their characteristics, is a vital step in enabling one to capture them in origami.

Here is one of the fundamental patterns for folding any vertebrate. After you have mastered it, you can work on the bone structure and modeling to make the object more life-like. You can also fold other animals like the ones shown above.

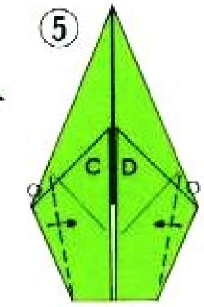








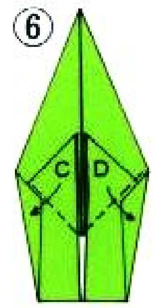
⑤ Fold C & D inward on the valley folds.

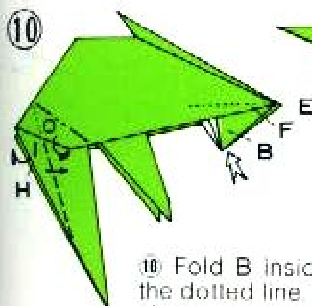


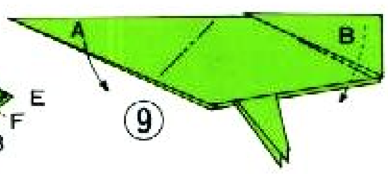
①② Mark the diagonal crease AB on a square piece of paper. Make the other lines by using the diagonal line. Bring together all folded lines as in ③.

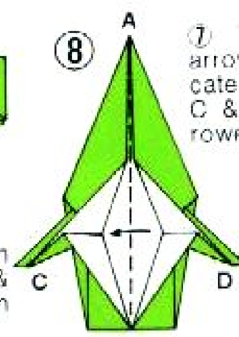
③ Make valley folds as shown and open C & D as arrows indicate.

④ Bring B to ○ to mark F. Fold B backward on the mountain fold. Bring C & D up.

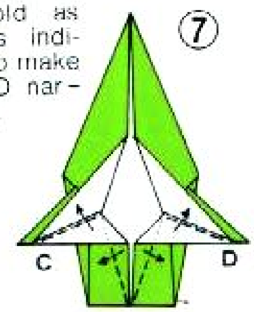






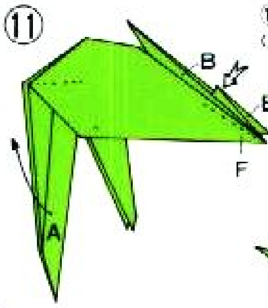


⑦ Fold as arrows indicate to make C & D narrower.

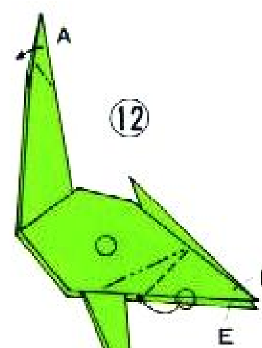


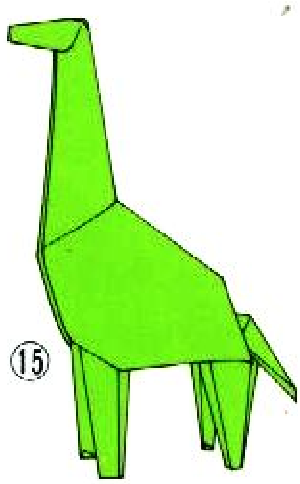
⑩ Fold B inside to the dotted line. Fold H & I outward on the valley fold. Fold ○ parts inward as the arrows indicate.

⑨ On the mountain folds, fold both A & B down between the sheets.

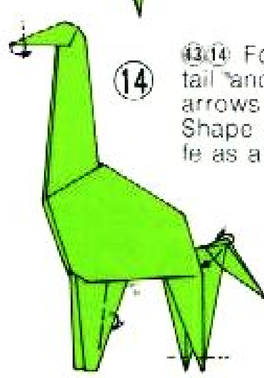


⑪ Bring A up to the dotted line.

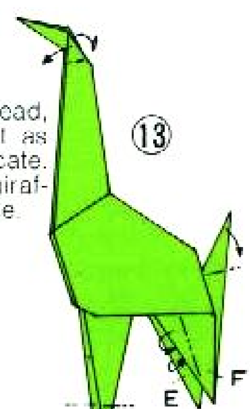




Finish



⑬⑭ Fold head, tail and feet as arrows indicate. Shape the giraffe as a whole.



⑫ Fold A on the mountain fold as the arrow indicates. Put the index finger of your left hand inside of ○, support the other side of the body with your middle finger and put your thumb on the front of the body. Then, with your right hand, push E & F in the direction of the arrow.

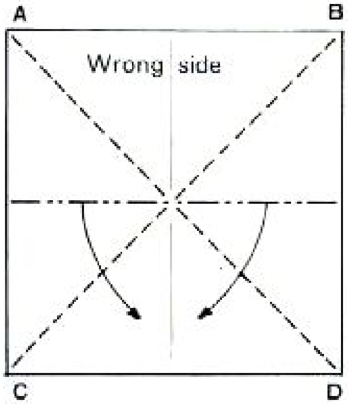


GORILLA

Our next subject is the gorilla, one of the most popular animals in the zoo. The gorilla is the largest and strongest of all the anthropoids and walks upright, like a man.

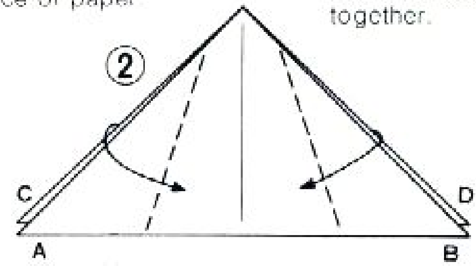
This method of folding is simple and shows the gorilla in its most familiar stance, in a crouch. When you make it, you should do so as if you were actually looking at a gorilla in the zoo or in a photograph. By making the forehead broad and roughly shaping the mouth and nose, you will be able to make it look like a gorilla.

Repeated folding to produce a satisfactory image will cause the paper to become wrinkled. Then you should make the face longer. Try not to be too concerned with the face alone but work on the figure as a whole.



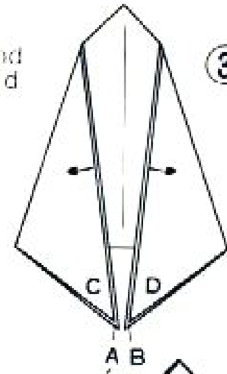
①

① Make valley and mountain folds as shown on a square piece of paper.



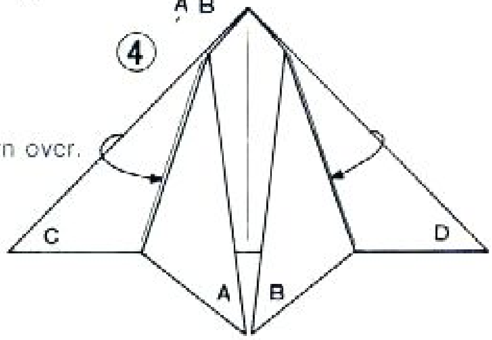
②

② Fold AC and BD forward together.

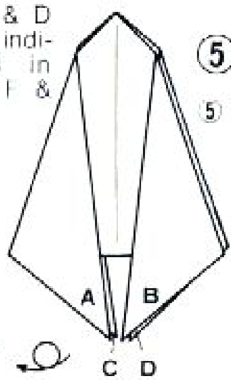


③

③ Spread C & D out as in ④. Put C under A and D under B.

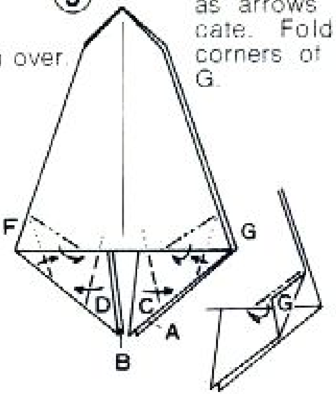


④



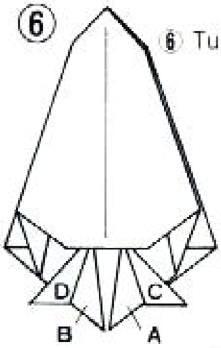
⑤

⑤ Turn over.



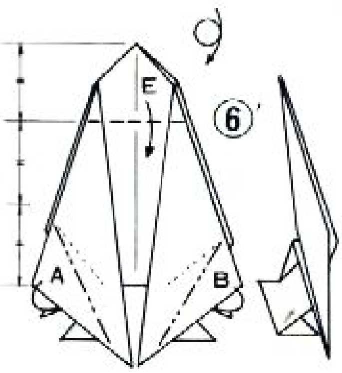
⑤′

⑤′ Fold C & D as arrows indicate. Fold in corners of F & G.



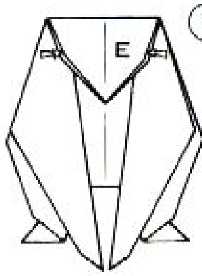
⑥

⑥ Turn over.



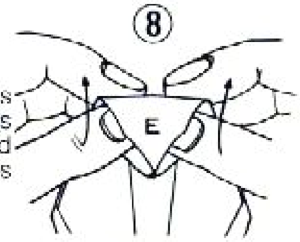
⑥′

⑥′ Fold A & B inward on the mountain folds. Fold reverse sides on the dotted lines. Fold E down on the valley fold.

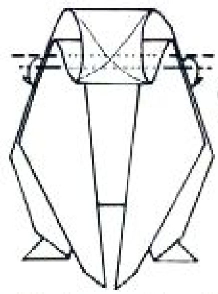


⑦

⑦ Put your thumbs inside the pouches formed by E and push them up as shown in ⑧.

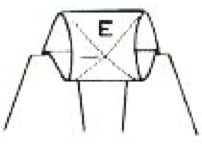


⑧



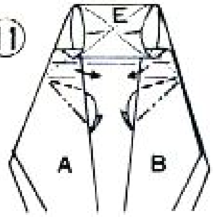
⑨

⑨ Make soft pleats around the neck area.



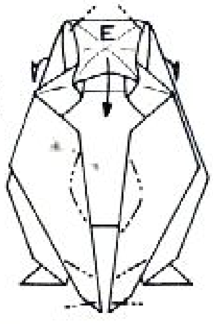
⑩

⑩ Spread E out.



⑪

⑪ Around the shoulders, fold mountain and valley folds toward the back of the arms. Fold the neck area inward as arrows indicate.



⑫

⑫ Make the mouth leaving E round and soft. Shape the nose and eyes by making small pleats. Bring the face down and shape the whole figure along the mountain folds.

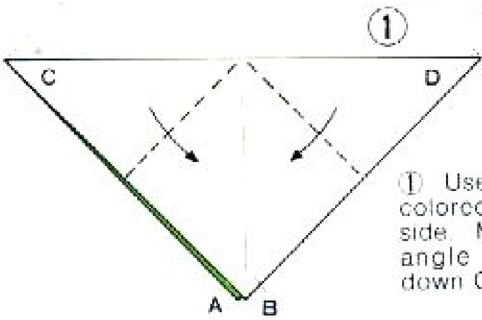


⑬

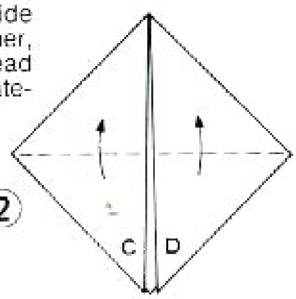
Finish

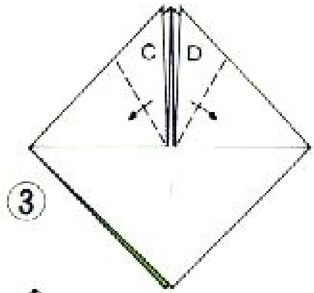
Head

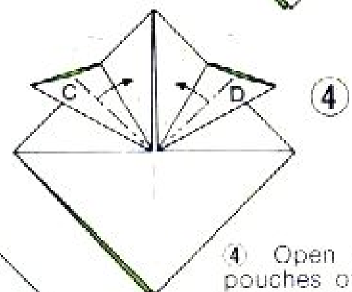
Fold the giant panda by using two sheets of paper, black on one side white on the other, to make the head and body separately.



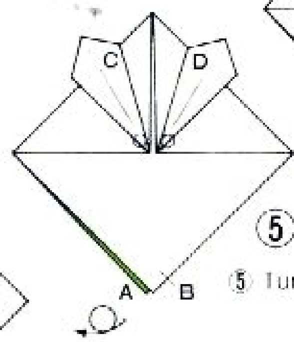
① Use the white colored side outside. Make a triangle and fold down C & D.



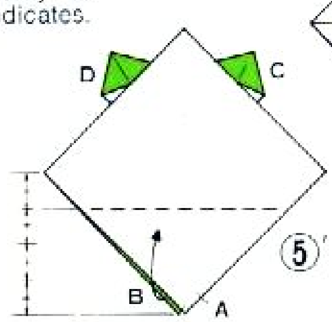




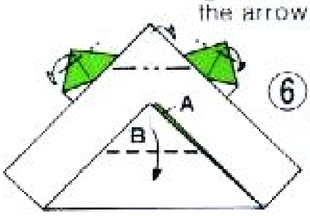
④ Open up the pouches of C & D with your fingers to the dotted lines.

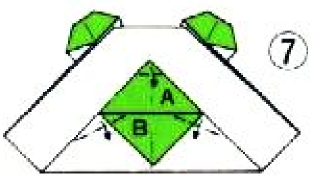


⑤ Turn over.

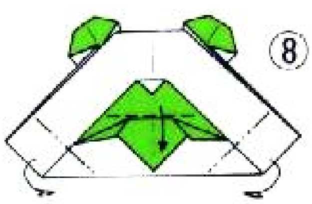


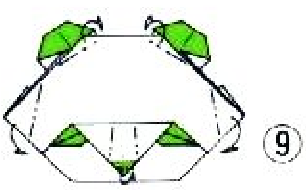
⑥ Fold B only as the arrow indicates.



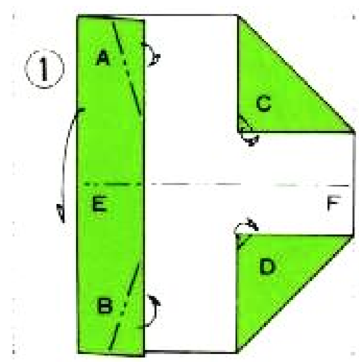


⑦ Consider the size of the muzzle. Fold A a bit and fold corners of B to make the eyes.

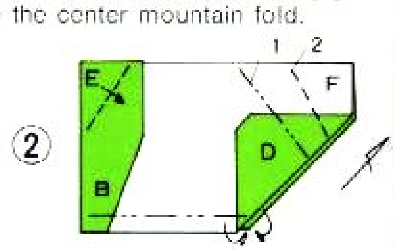




Body

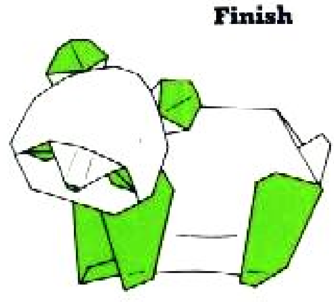


① Fold a square piece of paper as in ①. Fold all corners as shown. Fold in half on the center mountain fold.

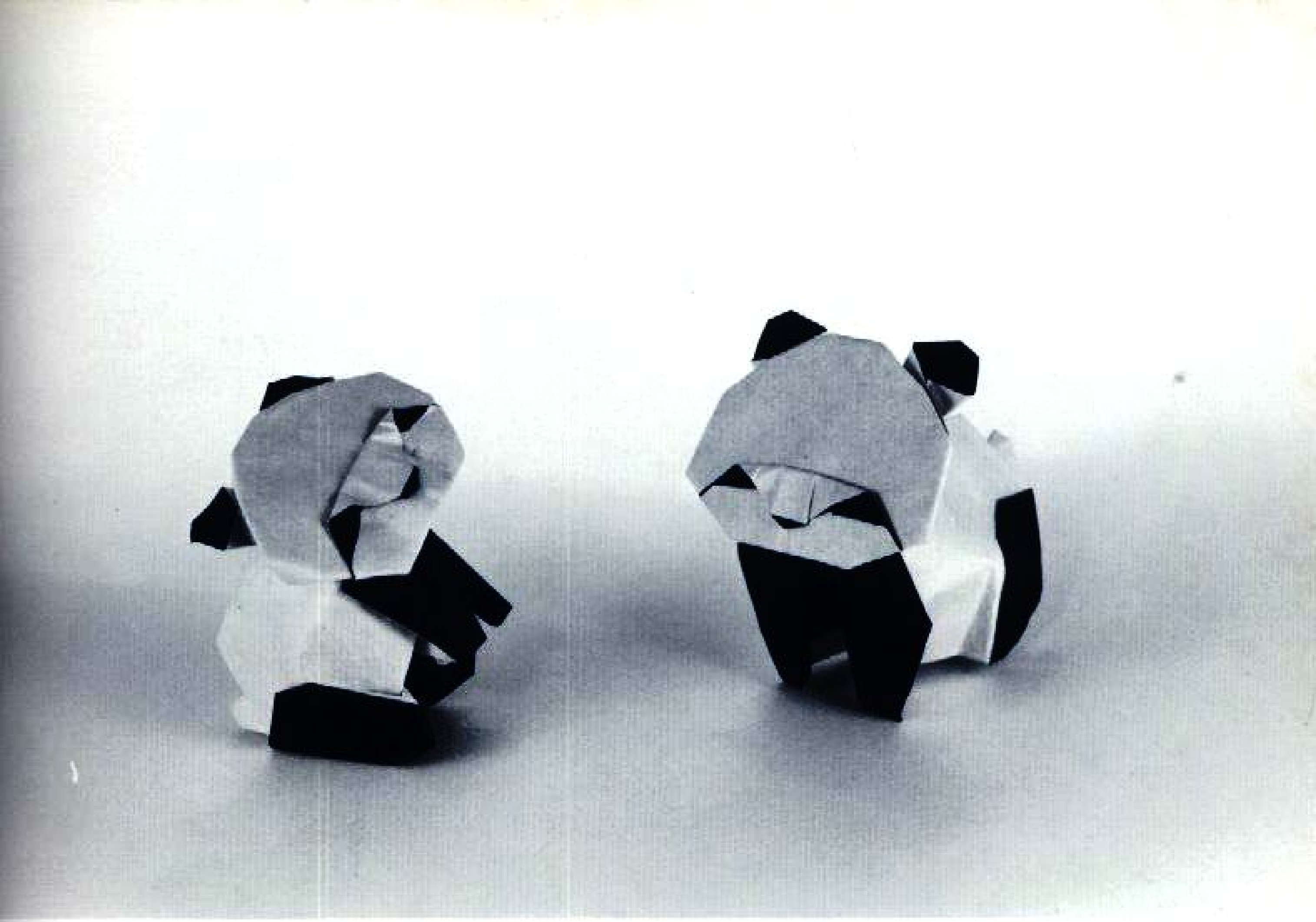


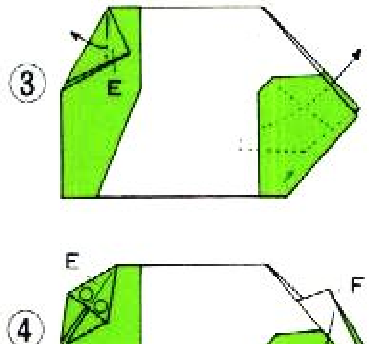
② Fold the bottom line inward on the mountain fold. Fold F inward on the mountain fold and bring up on the valley fold.

Finish



⑩ + ⑤





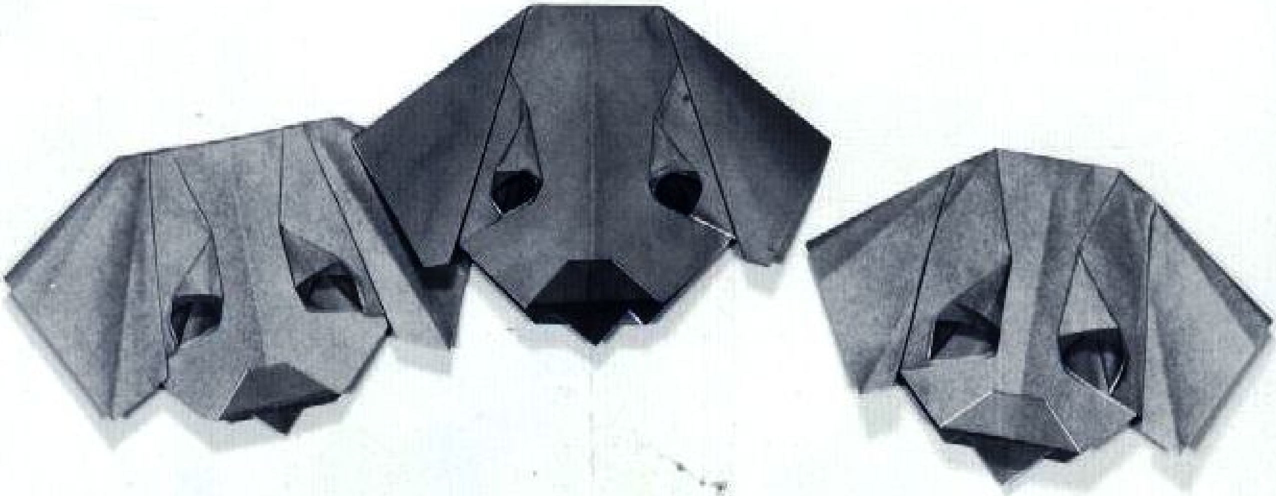
④ Push parts inward under the tail. Make darts at the front and rear feet to make it stand up. Hook ◯ of ⑤ of the head over ◯ of the body.

GIANT PANDA

Next, we would like to fold the giant panda, that rare, charming animal which is found only in China.

In the beginning, I tried to make a realistic panda out of one sheet of paper. However, it was impossible to produce a good figure without more knowledge of the animal so I joined the crowds at the Ueno Zoo in Tokyo to see them. It was so crowded that each person only had about 30 seconds to observe them. A friend arranged for me to look at a documentary film on pandas and one of the keepers told me about their habits and characteristics. Pandas are generally carefree animals and usually sleep long hours.

I used two sheets of paper to make it easy to fold. Depending on how you arrange the head on the body, you can make your panda show various expressions. I made the face rather simple with thick upper eyelids. Just the head alone makes a nice object.



THE FACE OF A DOG

ORIGAMI AS FORMATIVE ART — PART I

In the process of raising children, it is very important to clarify the following factors in order to let them know exactly what is going on in their lives : **when, where, who, what** and **how.**

Animals (including human beings) adjust themselves to the constantly changing environment by using their perceptive organs of vision, hearing, smell, touch and taste and furthermore, they cooperate with each other by communicating with voice and sound. I have tried to illustrate the fundamental knowledge that leads us to a healthy life in my *Formative Origami*. I want to activate children's sense of beauty and love through the themes that they wish to fold. As an example, let us choose a puppy.

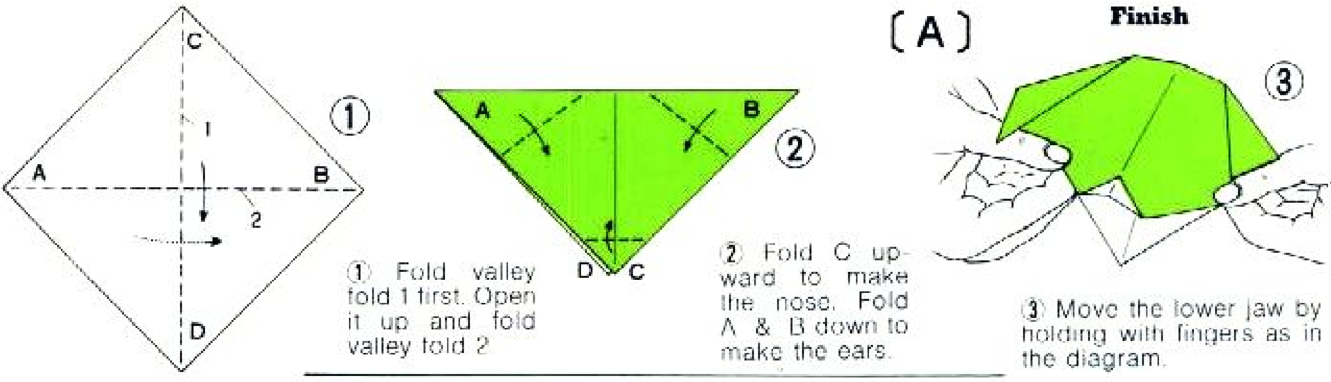
"It's spring and the fields are covered with pretty green grass. I can't see it but I can hear a puppy crying. It's coming nearer and nearer. There, I can see its face!"

After telling the children this, you can make the face of the dog shown in 〔A〕 and by moving its mouth, you will delight them by mimicking the cries of a puppy. Then, you can focus on a puppy's sense of smell by saying, "Oh, I can smell something good!" And you can wiggle the puppy's nose.

In order to catch and hold the attention of active children, it is essential to indicate the action and movement of the object clearly. You may continue your story by saying, "I hear many more puppies. Why don' t we go and play with them?"

Origami can be used in this way in the formative educational field. We can make up many stories to tell the children and fill them with imagination through the art of origami.

[A]

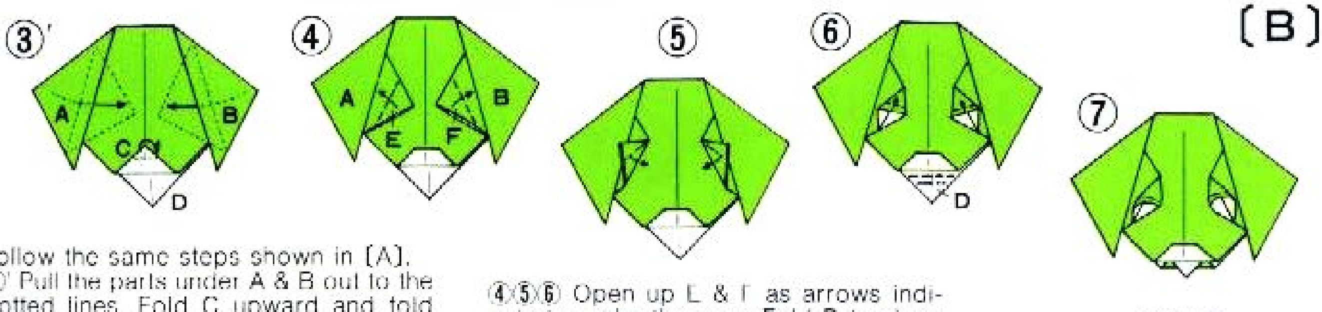


① Fold valley fold 1 first. Open it up and fold valley fold 2.

② Fold C upward to make the nose. Fold A & B down to make the ears.

③ Move the lower jaw by holding with fingers as in the diagram.

[B]

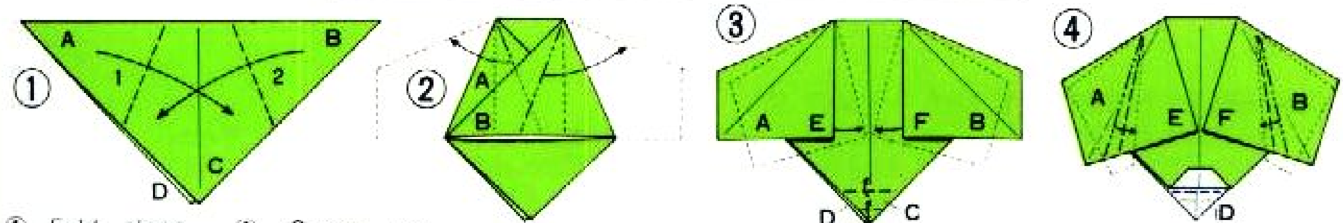


Finish

Follow the same steps shown in [A].
③′ Pull the parts under A & B out to the dotted lines. Fold C upward and fold the pointed part backwards.

④⑤⑥ Open up E & F as arrows indicate to make the eyes. Fold D to show the tongue under the upper jaw.

[C]

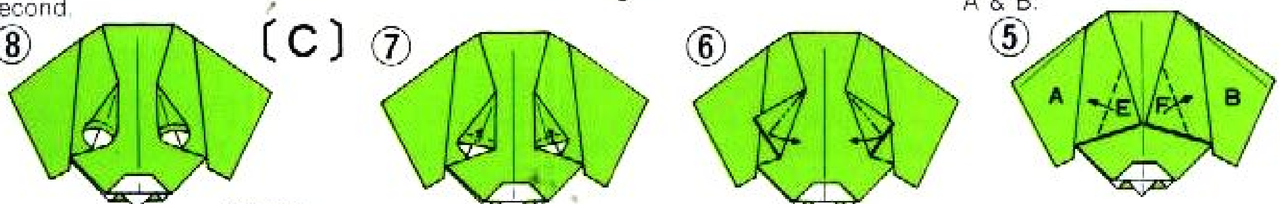


① Fold along the diagonal line on a square piece of paper. Fold A first and B second.

② Open up pouches of A & B and bring them out to the dotted lines.

③ Fold C twice to make the muzzle. Pull E & F toward the center and press them firmly with fingers.

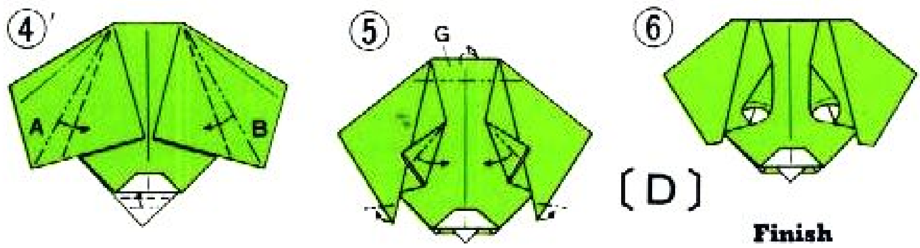
④ Fold a small pleat on D to make the lower jaw and tongue. Make ears by folding valley and mountain folds on A & B.



Finish

⑤⑥⑦ Fold as arrows indicate to make the eyes.

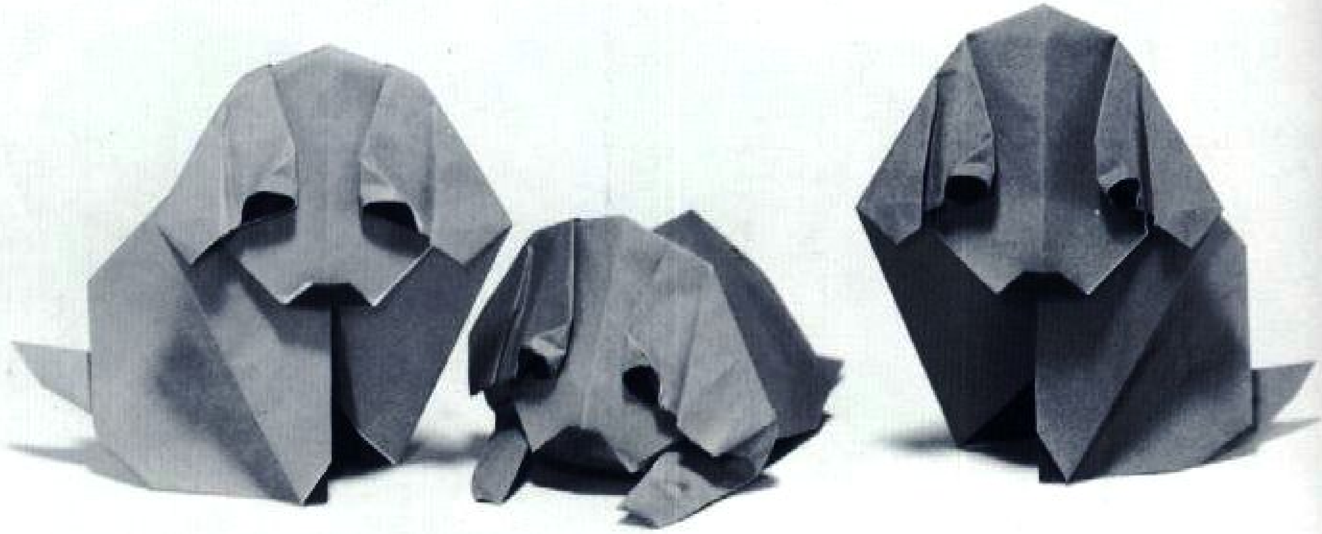
[D]



Finish

Follow the same steps ①–④ of [C].

④′ Make ears by marking mountain and valley folds that run radially. Then fold in direction of arrows.



PUPPY

ORIGAMI AS FORMATIVE ART – PART II

I would like to talk about having fun with origami and use a puppy for our theme.

Here, let's make the nose first by bending a bit of the corner of A in ① instead of making it is step ④. Stand it up on DB and CB as base lines, and you can easily imagine a puppy, sitting on the ground and looking up at the sky.

Saying, "A nice smell is coming from behind you", you can fold on the valley fold of ② and turn the head backwards. Now, the puppy looks as if it is sniffing the air.

Then you can work on A of diagram ③ and push it open as in the following diagram ④. Before making the ears, you can say to the child, "This puppy cannot hear at all even when its friends are calling. I wonder why?" The child will probably answer, looking at E and F, which do not look very much like ears, "He doesn't have any ears."

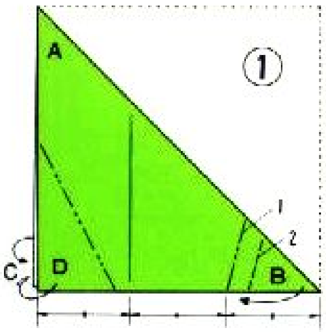
"Let's make him some." Let the child fold the ears. Children usually fold E and F as they like. Those who studied how to make the face of the dog on the previous page will certainly know how to make the ears by bending the corners on both sides of the head. It is this kind of "insight learning" that is so important for nurturing creativity in the minds of children.

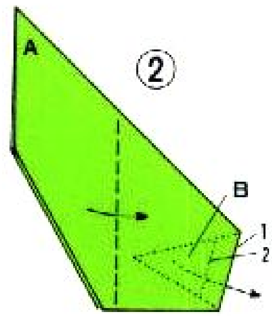
When you have made a pretty good looking puppy like the one in diagram ④, you can continue your game by saying, "His friend is calling him. He's over there on the right hand side." Now you can fold the valley fold in diagram ② in the opposite direction and change the position of the upper body. You could suggest that the child alter the puppy's posture by turning the nose up or down, to the right or left or bending the neck diagonally. The results will vary according to the mental, spiritual and intellectual growth of each child. There will also be a noticeable difference depending on whether the idea is centered on the child himself or around the object, in this case the puppy.

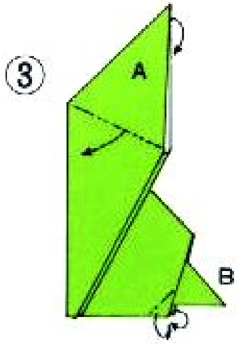
Here, I have shown how to fold a puppy but an adult dog can be made by shifting the valley line in diagram ②, which will change the proportions. It will be fun to make a parent dog with a puppy or a puppy and its friends. The puppy can be made to show its happiness by wagging his tail.

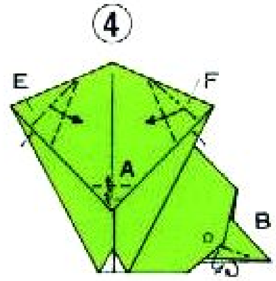
So you see, out of one sheet of paper you can show various aspects of life to illustrate **when**, **where**, **who**, **what** and **how**. Furthermore, you can learn about "shape and posture" which are fundamental elements in formative art. Most important of all, the exciting world of Creative Origami opens up before children.

PUPPY









① Fold a square piece of paper along the diagonal line. Fold C & D inward. Fold B in on the mountain fold.

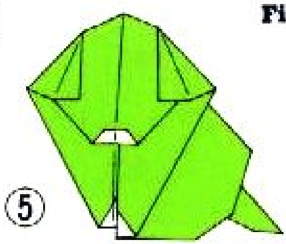
② Fold A on the valley fold. Fold B into the dotted line from the mountain fold. Pull B out at the dotted line 2.

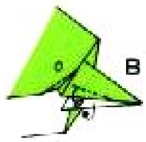
③ Open A up to make the face. Fold the corner under B inward.

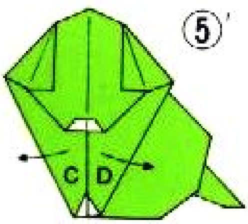
④ Fold B narrower to make the tail. Fold A twice to make the nose. Fold and slide the mountain and valley folds a bit to make the ears as in ⑤.

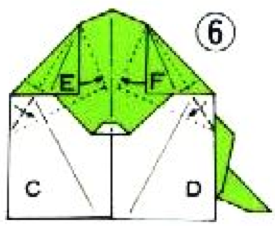
〔A〕

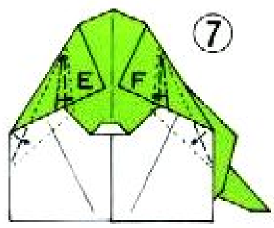
Finish

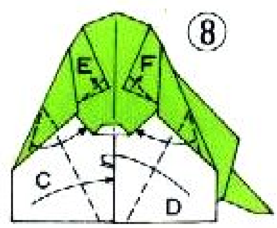












Follow the same steps ①–⑤ for the puppy.
⑤' Open up C & D as arrows indicate.

⑥ Bring E & F close to the center and fold.

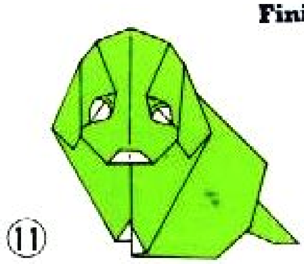
⑦ Fold the mountain and valley folds to mark narrow triangles. Then, slide them to the dotted lines and fold them.

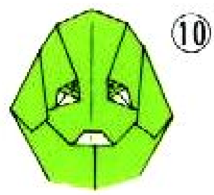
⑧⑨⑩ Fold E & F to make the eyes. Fold mountain and valley folds under the ears. Fold C & D once again.

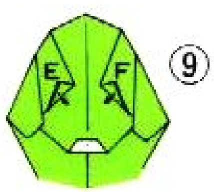
SPANIEL PUPPY

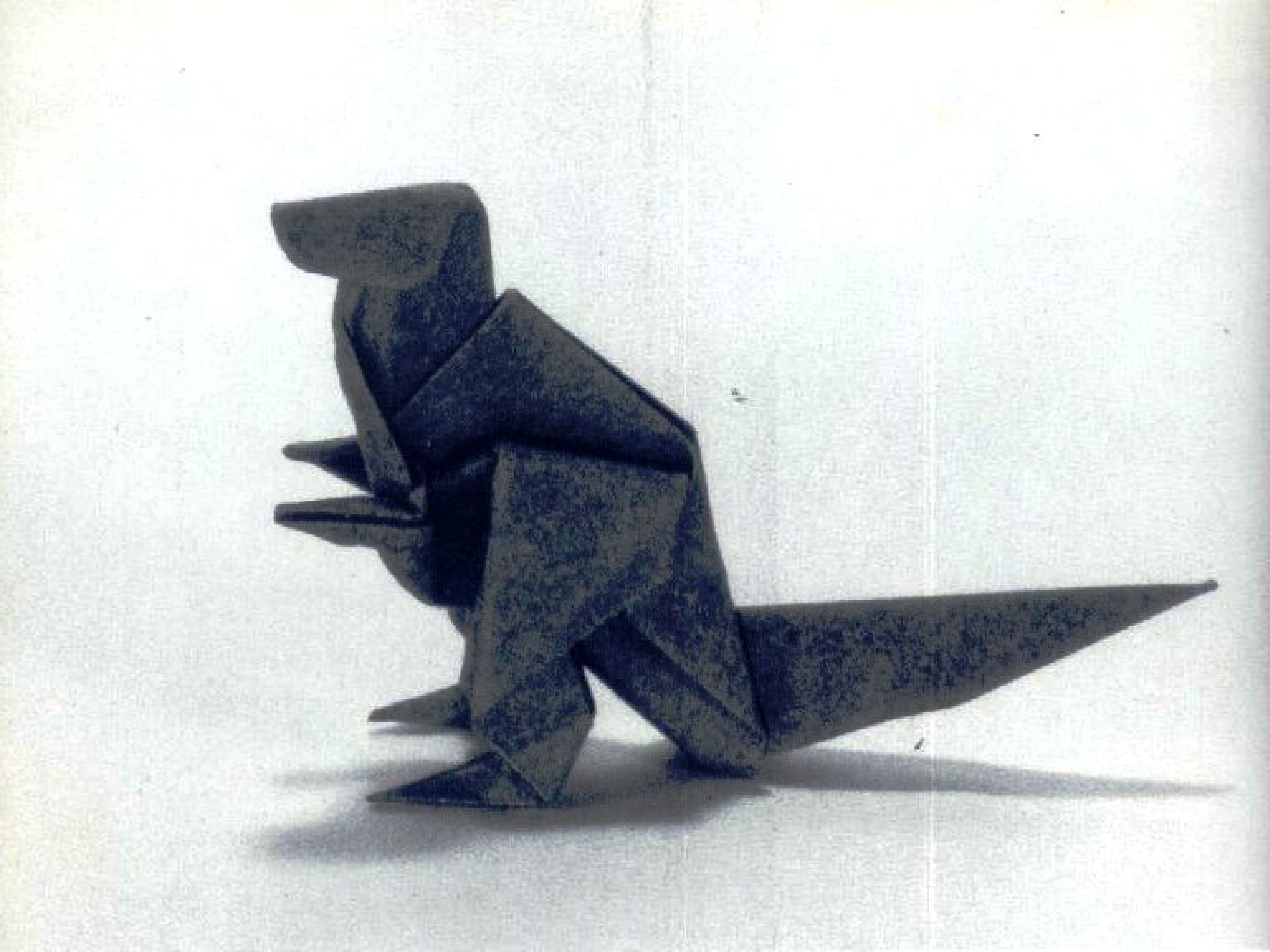
〔B〕

Finish









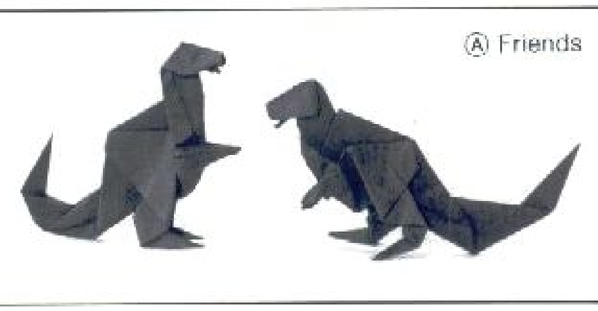
IGUANODON

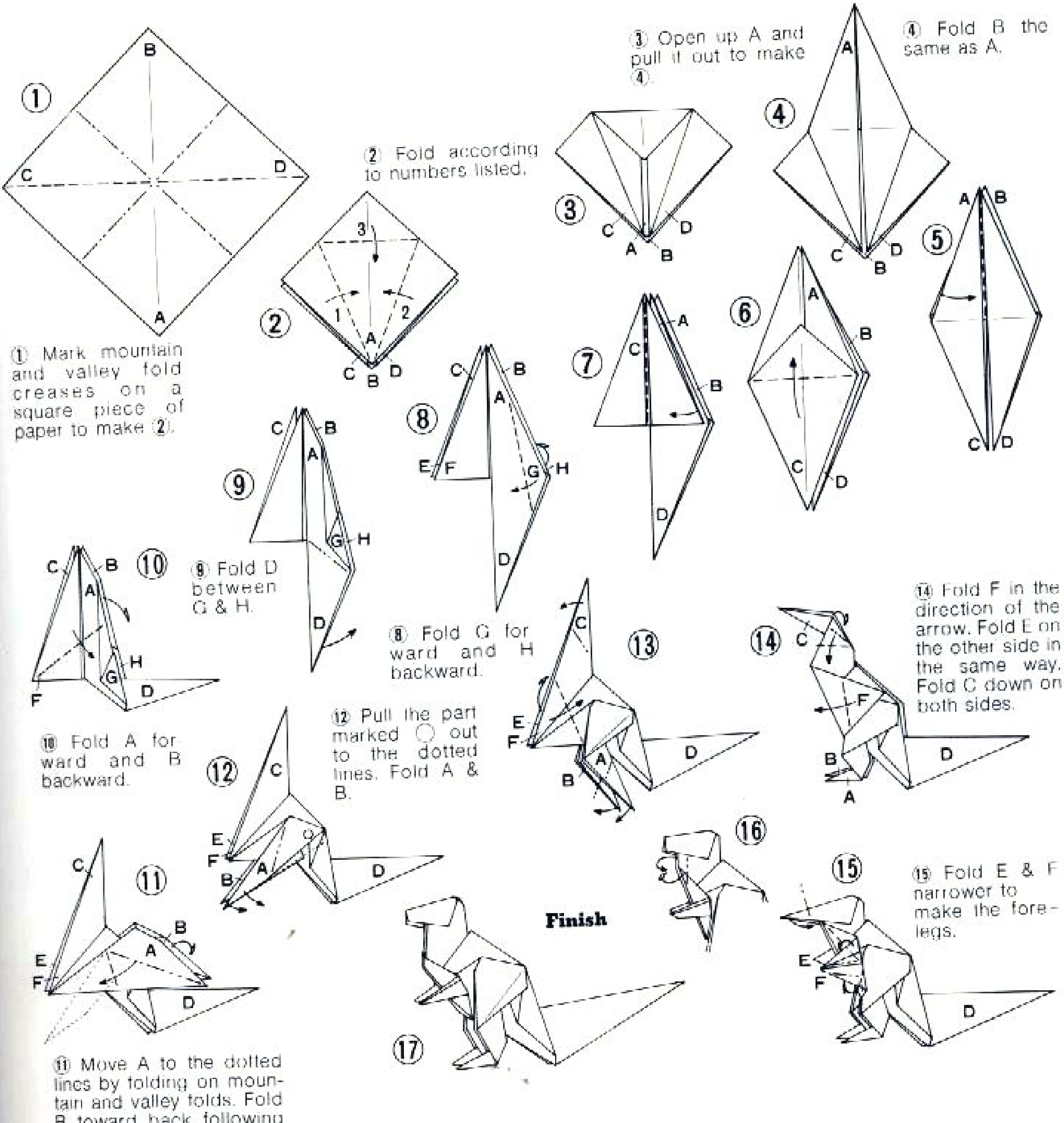
Let us fold an iguanodon, an herbivorous animal which existed between the Jurassic and Cretaceous periods, 140 million years ago. Try to imagine its physique and posture when it was walking about the land.

Origami is not something that you should be satisfied with after completing one figure. Repetition will enable you to make increasingly lifelike objects. After you become good at making this animal, you can try making it in the various poses shown in Ⓐ, Ⓑ, Ⓒ, and Ⓓ.

Also, if you gently pull the chest and tail out in diagram ⑰, and expand the body with your finger or a small stick, it will become 3-dimensional and look very powerful. If you make the neck slender with a smaller head, you will have a brontosaurus. Study these animals in illustrations to familiarize yourself with them.

Ⓐ Friends





① Mark mountain and valley fold creases on a square piece of paper to make ②.

② Fold according to numbers listed.

③ Open up A and pull it out to make ④.

④ Fold B the same as A.

⑧ Fold G forward and H backward.

⑨ Fold D between G & H.

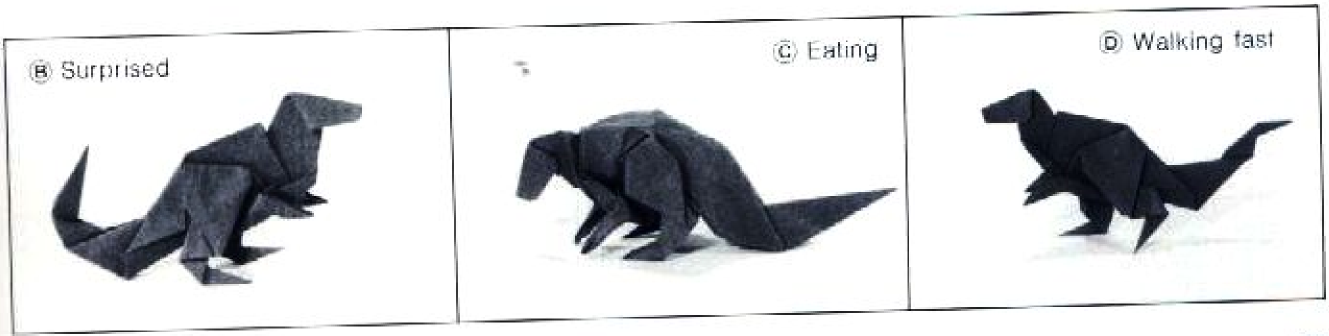
⑩ Fold A forward and B backward.

⑪ Move A to the dotted lines by folding on mountain and valley folds. Fold B toward back following the same steps you did with A.

⑫ Pull the part marked ◯ out to the dotted lines. Fold A & B.

⑭ Fold F in the direction of the arrow. Fold E on the other side in the same way. Fold C down on both sides.

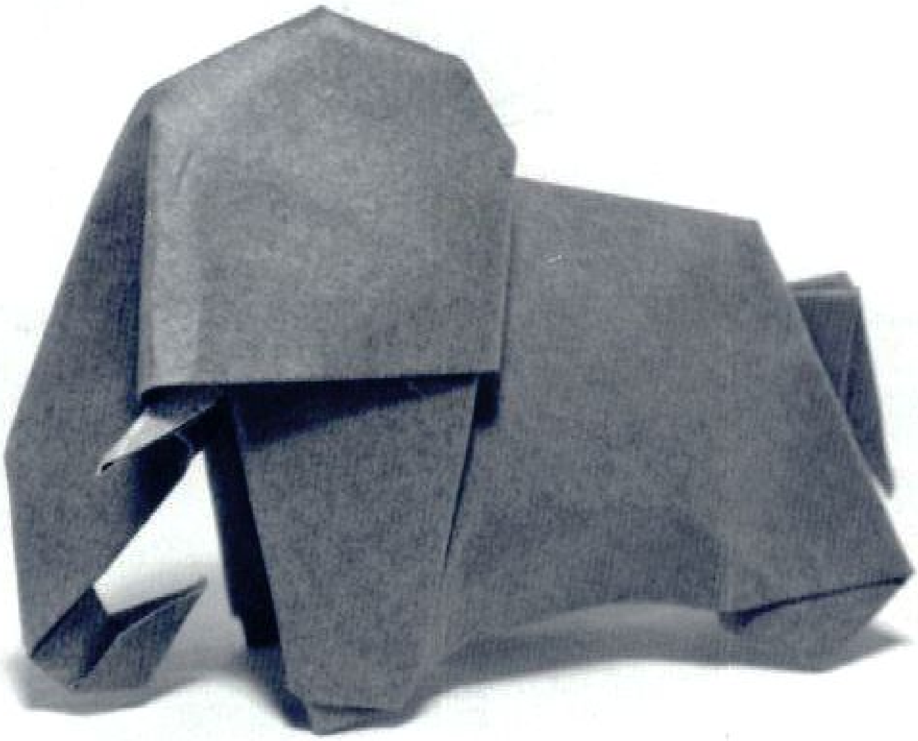
⑮ Fold E & F narrower to make the fore-legs.



Ⓑ Surprised

Ⓒ Eating

Ⓓ Walking fast



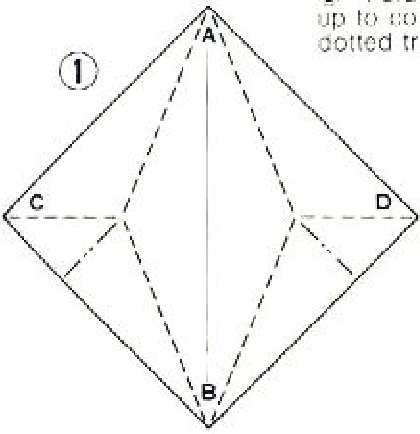
ELEPHANT

I think it would be nice to make a baby elephant whose tusks are just beginning to grow. Use a piece of gray paper with a white back and make the tusks with the white side.

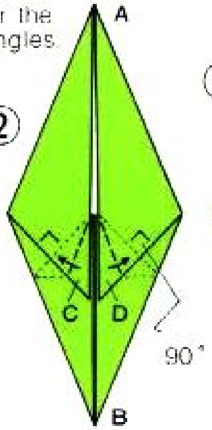
This is a good example of Creative Origami made in the free expression style. For instance, I folded this elephant freely as though I were working with clay. I omitted unnecessary details and emphasized the main lines to make it easy for you to fold.

This is the most fundamental method of folding animals when you are concerned about their build and different postures. Through the art of origami, you can learn so much as you discover the delicate relationship that exists between the diagram and the 3-dimensional end product.

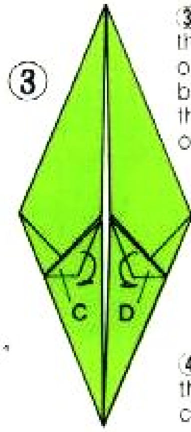
When making an elephant without tusks, you may skip the steps from ③ to ⑤. You should proceed from ⑥. You can make elephants in many poses, with their trunks stretched out or raised above their heads.



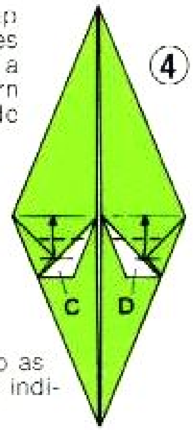
(1) Mark the diagonal crease AB. Then, mark all the valley folds using the diagonal line. Pinch C & D and fold them down as in the diagram.



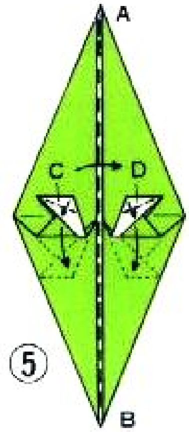
(2) Fold C & D up to cover the dotted triangles.



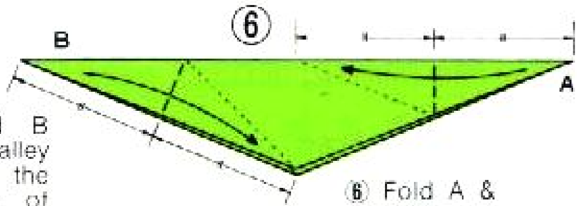
(3) Open up the pouches of C & D a bit and turn them inside out.



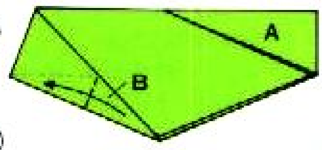
(4) Fold up as the arrows indicate.



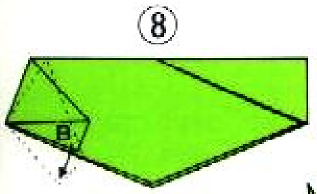
(5) Fold C & D narrower and bring them down. Bring C over D.



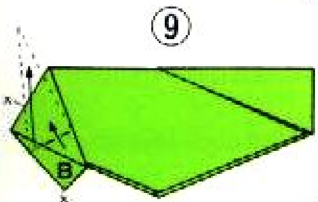
(6) Fold A & B on the dotted lines as arrows indicate.



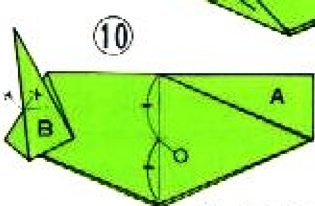
(7) Fold B on the valley fold in the direction of the arrow.



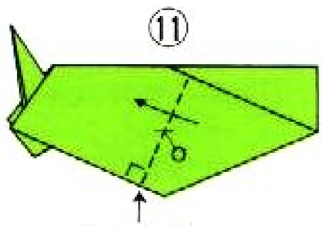
(8) Bring B down to the dotted line.



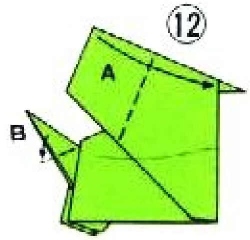
(9) Bring the tip of B up to the dotted triangle.



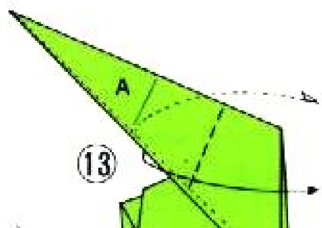
(10) Spread B out once then fold it in and out to make the tail.

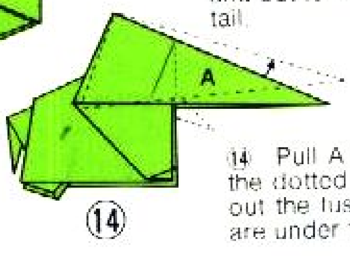


(11) Fold as shown in the diagram.

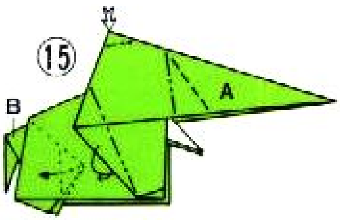


(12) Fold B down between sheets. Fold A to mark the valley fold. Then, spread it out and fold over the dotted line to make (14).





(14) Pull A to within the dotted line. Pull out the tusks which are under the body.

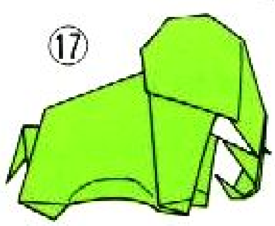


(15) Fold as arrows direct. Pinch A and fold it down between tusks.



(16) Pinch the mountain fold from outside and shape the body line. Fold the trunk as in the diagram.

Finish





About the Author

Akira Yoshizawa was born in Tochigi Prefecture in 1911. His interest in origami began from the time he was a child, when he started to study and create figures.

His serious work commenced in 1938 while he was employed in a steel mill. In 1950, as a result of the publication of his educational origami, he embarked on what was to become his life work of using origami for the benefit of society and he was often written up in the media, held exhibitions and gave lectures.

In 1954, International Origami Study Society was established, which played a great part in spreading interest in origami nationally as well as abroad.

Dr.Gershon Legman organized the exhibit for Yoshizawa's works at Museum in Amsterdam, Holland in 1955. This brought him to the attention of the international art world for his extraordinary creations and he subsequently held exhibitions in many places.

Exhibitions were held in 1957 in Tokyo and Yokohama. After that he exhibited in many other cities in Japan.

Mrs.Lillian Oppenheimer visited Tokyo in 1959 to meet Yoshizawa for the purpose of founding the Origami Center of America. She held an exhibition in the Cooper Union Museum in New York and then showed his works in the United States.

He won the Mainichi Culture Award for Publication for his book, "Tanoshii Origami" in 1963.

From 1966 to 1984, under the auspices of the Foreign Ministry and the Japan Foundation, Yoshizawa visited Australia, New Zealand, Europe, Southeast Asia and Central America, a total of over 30 countries, as lecturer and teacher of origami and contributed very much to international relations.

In 1970 and 1971 , the International Readers'Digest magazine did an article on him which was circulated around the globe.

He recieved the Mobil Children's Culture Award in 1971.

1983 was the year in which he was decorated with the Order of the Rising Sun, fifth class. He also held an exhibition in the city of Philadelphia.

In 1984, in both Paris and Tokyo, sponsored by the Asahi Newspaper and Pierre Cardin, he had a one-man exhibition.

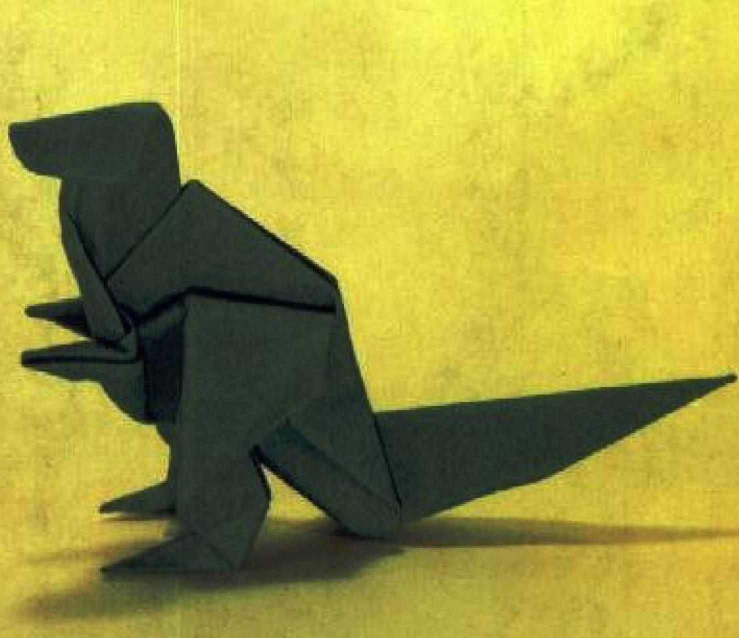
Yoshizawa opened his own atelier and display room in 1985. It gives him a place for exhibition where he is also able to work on his publications. He continues to be active throughout the country teaching, not only the art and techniques of origami but also explaining his theory about it.

In 1986, he recieved the Foreign Minister's Prize, in recognition of his 20 years of contribution to mutual understanding among the nations of the world as he traveled as an emissary of Japanese culture.

Other Books by Akira Yoshizawa

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Origami Tokuhon II (Origami Reader II)
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